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SOME ASPECTS OF THE TARIFF QUESTION.\*

THE protective policy of the United States has had unexpected successes and surprising failures. "Success" in this connection may be taken to mean that duties have brought about a considerable development of the protected industry, while "failure" describes those cases where there has been an absence of such a development. It need not be said that such success does not necessarily imply advantage to the community at large: it indicates only that the object in view has been attained by the protective measures. There have been curious differences in the extent to which this primary object has been attained; and the results have varied not only in different branches of manufactures, but, what is more surprising, in different sorts of agricultural production. The present paper aims to give some account of the more noteworthy of these cases, and to point out that underneath them all lies a common principle, and one not unfamiliar in economics.

The first case to which I will turn is that of the production of flax fibre. In general, agricultural commodities are exported from the United States on a large scale, and protective duties on them, while they have been frequently imposed, are nominal: agricultural products would not be imported in any event. But with flax we find the reverse of the usual conditions. Flax has been imported into this country for generations, and import duties have had no perceptible effect in checking importation or in stimulating the production of flax at home. During the colonial times, when the great textile inventions were yet to be perfected, and when household clothing was almost universally used, flax was raised and home-spun linen produced; and this would probably have been the case even without the bounties and premiums which were common during the colonial period.\* But, when the great inventions had caused the disappearance of household industry, flax and linen practically disappeared from the industry of the United States. The manufacture of cotton and woollen goods from domestic raw material arose, but that of linens hardly exists even in our own time. Only twine, thread, and a few coarse linen fabrics are now made in the United States. Duties on flax were imposed in 1828, again in 1842, again in 1846; during the Civil War, the duty was maintained, and was increased in 1870.† During the war, the deficiency in the cotton supply caused a temporary stimulus to flax-raising; and the increase of duty in 1870 was probably due to the wish of the farmers to continue growing flax in face of the renewed supplies of cotton. But the production of flax fibre has steadily declined nevertheless, and at the present time is not carried on at all in the United States.

\* Notices of these bounties are in Bishop's *History of Manufactures*, Volume I., and are also collected in Mr. E. A. Whitman's *Flax Culture in the United States*, which contains an excellent brief account of the flax industry.

† Whitman, *Flax Culture*, p. 24; Taussig, *Tariff History of the United States*, p. 227.

The census figures show very clearly what is the situation. The production of flax fibre in the United States in the census years was :—

In 1850, . . . . .	3,850 tons.
" 1860, . . . . .	2,350 "
" 1870, . . . . .	18,600 "
" 1880, . . . . .	800 "

The small quantity of flax now raised is of coarse quality and quite unsuited to the making of linen cloth. Meanwhile, importation continues steadily. The imports of flax fibre were in 1886 3,700 tons, and in 1887 nearly 6,000 tons.

What, now, is the explanation of a state of things so different from that which prevails as to most agricultural products? We get hints towards a solution of the problem by examining the conditions under which flax is raised in foreign countries. In the first place, flax is eminently a product of intensive culture, and is grown in countries like Belgium and France, whose agriculture is typical of intensive culture.\* A laborious and careful preparation of the ground is required. Several ploughings and harrowings are called for; for the best flax, the land is trenched by spade. The ground must be carefully weeded, and "in Belgium the weeding is done by hand, when the plants are a few inches high, by women and children who crawl about on their hands and knees, with cloths to protect them from the ground, working always towards the wind, so that the plants may be at once blown back to an upright position." From twenty-five to thirty tons of manure per acre are ploughed in, and, in addition, liquid manure is applied. The harvest is as laborious as

\* The best full account of the methods of cultivating flax and hemp is given in the report of the commission appointed by Congress during the Civil War. The report is in *Senate Executive Documents* (1864-65), No. 35. A briefer and useful account, from which we quote in the following pages, has been condensed from this source and others by Mr. Whitman in his *Flax Culture*.

the preparation. The plants are pulled by the roots, for cutting by machine or by scythe spoils the fibre; and, moreover, the part of the plant nearest the ground, which is lost by cutting, contains the best fibre.\*

The process of preparing flax for market, however, is by no means completed when it has been taken from the ground. It must first be rotted, then scutched, finally hackled. Rotting consists in immersing the plants in water, and thereby loosening the coarse external covering from the inner fibre which is to be converted into linen. In the United States, this has been done for both flax and hemp by "dew-rotting,"—that is, leaving the plants exposed to the dew in the fields; but this method, while simple and easy, makes poor fibre. Fibre of good quality can only be made by immersion during from five to ten days in water, which becomes foul and noisome from the decomposition of the plants. "The flax is then removed from the pools, and in this operation too much care cannot be used. Hooks or pitchforks injure the fibre, and the bundles must be handed out by a man who stands in the now disgusting pool."

These bundles when dried are ready for the next operation, scutching, by which the inner woody pith of the plant is removed. The ancient method of doing this was simply to beat the stalks with clubs, and the reader of Tourguéneff's novels need not be told that this method is still used in Russia. Elsewhere, machines are in use, but only to a slight extent. Machines for breaking up the pith seem easy to get, and are simple enough; in Ireland, this part of the process is carried out by putting the stalks under cart-wheels. But scutching proper, the removal of the broken pith, is generally done by hand, "by beating the fibre with a blunt knife while it is held over the edge

\* In reaping flax, "a careful hand, who carries his scythe low and cuts a level swath, may do excellent work, but many workmen will waste too much of the best portion of the stalk by leaving a high and uneven stubble." *Report of Commission of 1865*, p. 29.

of a sharpened board."\* Finally, after scutching, comes hackling, which corresponds to the carding or combing of wool and cotton, and which leaves the clean flax fibre ready for spinning. This again was done universally by hand at the time when the Commission of 1865 reported; and Mr. Whitman tells us it is still done "mostly by hand even in large mills." The nature of the fibre apparently prevents that use of machinery for which wool and cotton are so wonderfully adapted.

Hemp and flax are much alike, and what has been said in regard to flax applies in the main to hemp. Hemp of good quality must also be heavily manured, should be pulled or cut close to the ground, water-rotted, scutched, and hackled. Bounties on hemp as well as on flax were given in colonial times, and duties have been imposed on it without interruption since the formation of the Union; yet hemp of the finer sort has never been raised, and has always been imported in considerable quantities.

It should be noted, however, that the preceding remarks apply only to the cultivation of flax and hemp for the purpose of obtaining good fibre. Flax is grown in large quantities in the United States for the seed, and hemp of coarse quality is grown in considerable quantities. Flax for seed need not be heavily manured, nor need the seed be thickly sown; weeding is unnecessary; the plants may be cut by scythe or machine; the seeds are easily and quickly separated from the fibre. Seed is produced plentifully under these conditions, and is sold to oil mills;

\* *Report of 1865*, p. 32. Very recently (1885), a machine for scutching has been invented in France, which is said to work well. A process for rotting with warm water has also been invented in the same country, which is said to save time, to dispose of large masses of fibre at once, and to produce good quality. *Report of Flax and Hemp Spinners' and Growers' Association for 1887*, pp. 12-15, 25. Attempts to supersede the old methods have been numerous and hitherto unsuccessful, and it remains to be seen what will be the working of these new processes. If successful, they may serve, perhaps, with the aid of other inventions, to bring about great changes in the character and distribution of the culture of flax and hemp.

but the flax straw becomes coarse and almost useless, and is generally burned on the fields or sold for a trifle. Hemp cultivated in the same way, and then dew-rotted, yields a coarse fibre, suitable for bagging and other coarse fabrics; and it has been grown for such uses in considerable quantities, mainly in Kentucky and Missouri. In recent years, however, jute and other tropical substitutes have displaced it even for these purposes, and its cultivation seems to have well-nigh come to an end.\*

The cases of flax and hemp are not unfamiliar, for general attention has been called to them by the present discussion of the tariff question. There is another instance, in many respects similar, to which reference is rarely, if ever, made. This is the failure of our high duties on imported sugar to stimulate the cultivation of the sugar beet and the manufacture of beet sugar. We have always had duties on sugar, and they have generally been high. Since the Civil War, they have ranged about fifty, sixty, even seventy per cent. on the value. In continental Europe, beet sugar, while originally much stimulated by protection, has been able for many years to hold its own in competition with cane sugar. In France, the import duty on cane sugar and the excise tax on beet sugar are the same. In Germany, the excise is but little less than the duty; and in both countries beet sugar supplies the bulk of the consumption.† The processes for

\* The census figures of the production of hemp are:—

For 1860	35,000 tons.
1860	74,000 "
1870	13,000 "
1880	5,000 "

The Flax and Hemp Association Reports state the production to have been:

In 1864,	3,500 tons.
1885,	6,000 "
1886,	10,000 "

"Jute has superseded American hemp or flax for bagging for cotton, and Manila and Sisal hemp are used in place of American hemp for cordage." *Report for 1885*, p. 25.

† The excessive drawbacks (often called bounties) which have been granted in recent years on the exportation of beet sugar from Germany, France, and

making beet sugar are public property, and our climate and soil are as well suited to the cultivation of the beet as are those of Central Europe. Attempts have been made in Maine, and an experiment is now being made in California in stimulating beet culture and making beet sugar; yet not even a beginning has been made in displacing cane sugar.

For an explanation of this phenomenon also, we may turn to the conditions under which beets are raised. These conditions are in many ways similar to those under which flax and hemp are cultivated.\* The ground must be thoroughly prepared, deeply ploughed, and frequently hoed. "The more the culture approaches that of a garden, the more the quantitative and qualitative yield will be increased." Between ten and fifteen tons of manure to the acre are applied, and are supplemented by other fertilizers. The roots are not ploughed up, but only loosened by a plough run between the furrows. They are pulled by hand, and care must be taken to prevent any bruise or cut, which may cause them to decay when stored. The leaves are cut off in the field by a knife. Ten or twenty laborers are needed to pull and prepare for transportation in one day the roots on an acre of land. So far there is an obvious analogy to the cultivation of flax and hemp; but, with beets, we have a still further characteristic of intensive culture. The beet cake which is left over in the sugar factory after the saccharine matter has been ex-

other countries, have given an extraordinary stimulus to the production of beet sugar. But this episode does not affect the point considered in the text; for, before the artificial stimulus began, the beet sugar industry had reached a position of independence. The Sugar Convention of last year (1888) promises to do away completely with this cause of complexity in sugar production.

\* See a *Report on the Culture of the Sugar Beet* made to the Department of Agriculture in 1880 by Mr. William McMurtrie. Quotations in the text are from this report, unless credited otherwise. An excellent brief account is given by E. W. Hilgard in the *Overland Monthly*, vol. viii. pp. 561-574. An account of the beet culture, designed to aid its introduction in this country, is given in Mr. L. S. Ware's *The Sugar Beet* (Philadelphia, 1880).

tracted is a valuable food for cattle, who again supply manure for further cultivation. In Germany, it is common to combine the processes of beet-raising, sugar-making, and cattle-feeding in one large undertaking. Where this is not done, the beet cake is often exchanged by the sugar factories, weight for weight, for beet roots. Obviously, the beet cake can have so high a value only in countries where stall-feeding is universal, or at least very common, and grazing land scarce. In a country like the United States, having a comparatively thin population, grazing land is plenty, and cattle-food correspondingly less in demand.\*

The characteristics of the branches of agriculture which we have been considering are, obviously, intensive cultivation and little use of machinery. The American farmer spreads his labor and capital thin over a large surface of land; and he uses machinery and labor-saving devices vastly more than the peasant or the landed proprietor of continental Europe. It is generally implied, in discussions of our international trade, that the extent and fertility of our soil explain our great agricultural exports. This is true, as far as it goes. But it should be qualified by adding that the products for which we have the most decided advantage and which we export in largest quantity are those suited not only for extensive cultivation, but suited also for the liberal use of agricultural machinery.

\*In recent years, experiments in making beet sugar have been made in California, which promise better than any of the earlier attempts. A small factory at Alvarado has been in operation for a number of years, and has paid. A much larger factory was put in operation in 1888 at Watsonville. It remains to be seen whether these enterprises will succeed in the long run, and there is a further question whether they would succeed if the duty on sugar were repealed. The fact that sugar from the Hawaiian Islands is admitted duty-free does not prevent the Californian beet-sugar enterprises from getting the practical benefit of a protective duty; for, as might be expected, this limited exemption from duty has not brought down the price or benefited consumers. It is not impossible that the extraordinary combination of soil and climate in California may bring about a development which could not be attained in other parts of the country.

Wheat and corn are the readiest examples of such products, and it is mainly for raising these that we have achieved the most remarkable triumphs in agricultural machinery. Flax, hemp, and beets, on the other hand, require intensive culture, and admit of little aid from labor-saving devices. The causes, therefore, of the agricultural competition of America, which has had so great an effect on the economic history of the last fifteen years, are to be found not only in physical conditions of soil and climate, but also in those moral and intellectual differences which lead the American to use better tools and more machinery than his European competitor. A keen and disinterested observer has gone so far as to refer the severity of American competition solely to this latter class of causes.\* The American farmer uses lighter and better tools; he works intelligently and strenuously while he is at it; his wagons are lighter by half, and his horses better and more easily harnessed; the mowing machine is used where the German peasant still uses the scythe or even the sickle; ploughs are better; reapers, binders, threshers, are used; time and labor are saved by riding instead of walking, by windmills and piping in place of the constant drawing and carrying of water which exhaust the German agricultural laborer. Every exertion, moreover, is more strenuous and active; the German laborer and farmer becomes another man when he has lived in the United States for a year or two.

If greater use of machinery, more intelligent use of time, and steadier exertion were of equal advantage in all branches of agriculture, they would not affect international trade; but they tell more in some branches than in

\* H. Semler, *Die wahre Bedeutung und die wirklichen Ursachen der nordamerikanischen Concurrenz*, Wismar, 1881. The preface, by another hand, tells us that Mr. Semler is a German of San Francisco, "who has lived for many years in various parts of North America, and has observed its conditions with the eyes of a man of wide experience." The book was written with the object of conveying a lesson to German agriculture.

others. The American farmer tends to confine his agriculture to those products for which they tell, and the country imports agricultural products in which they do not tell. This principle, of course, does not apply to all the characteristics of our agriculture. Peculiar advantages of soil and climate suffice in some cases, of which cotton and tobacco are the most obvious and important, to give a superiority little affected by greater efficiency or intelligence. But the most striking features in our agricultural situation seem to be explained by this line of consideration; not indeed by this solely, but by this taken together with the effects of a wide extent of virgin and fertile soil.

We may now turn to another set of cases, in manufacturing industry, where a similarly uneven working of protection has shown itself. The first case of this kind is in the silk manufacture, which I will examine with some detail.

The manufacture of silk goods in the United States is in the main of recent date, having come into being since the Civil War. To this general statement, however, there are two exceptions. Sewing silk has been made, in one way or another, for over a century. For fifty years after the Revolution, its manufacture was carried on, chiefly in Connecticut, as a household industry. About 1829, machinery began to be invented, was continually improved, and made the industry a manufacture in the modern sense of the term. In 1852, a new step was taken in the production of machine-twist for the sewing-machines which were coming into general use. A very large development of this branch of the industry took place, and the Census of 1860 reported the value of sewing-silk made to be no less than \$3,600,000.\* The

\* See the sketch in Mr. Wyckoff's *Silk Manufacture in the United States*, pp. 32, 42-46. See also a curious anonymous volume, *Silk Culture in the United States*, New York, 1844, which gives interesting information as to the early

second branch of the silk manufacture, which sprang up before the Civil War, was the making of fringes and trimmings. We have little information as to its early history, but in 1860 its products were found by the census to be worth \$2,800,000. Neither the manufacture of sewing-silk nor that of trimmings received during this period any special encouragement from import duties. Sewing-silk had been admitted between 1833 and 1841 at a duty which gradually went down from forty to twenty per cent. Other silk manufactures were admitted free of duty. The tariff act of 1842 imposed higher specific duties for a few years, but the act of 1846 imposed a duty of thirty per cent. on sewing-silk and one of twenty-five per cent. on other silk manufactures. These rates were reduced to twenty-four and nineteen per cent. respectively in 1857. Notwithstanding these moderate duties,—moderate, at least, in comparison with those of later years,—there was a marked growth of both industries in the decade between 1850 and 1860.

In striking contrast with these two cases is the development of other branches of the silk manufacture. When the Civil War began, the duties on silks were raised, naturally and with good reason; and in 1864 the general duty was sixty per cent. Like so many other of the duties imposed at that time, it remained substantially unchanged after the war closed. The only change of much note has been a reduction to fifty per cent. in the tariff act of 1883. The high duty has brought into existence a considerable and varied silk manufacture. The effect in this case, unlike that of some other duties, was not intentional. The high duties on silks were imposed during the war in order to raise the revenue, with little thought of protection and without solicitation from domestic pro-

history both of silk culture and silk manufacture. In the introduction to the volume on manufactures in the Census of 1860 there is a good sketch of the history of the silk manufacture to that date.

ducers. In this respect, they differ from avowedly protective duties, like those on wool and woollens. But they have been followed by more marked effects; they have created an entirely new industry. The development of the silk manufacture was comparatively slow before 1870. It proceeded more rapidly in the years of activity preceding 1873. A new stimulus seems to have been given by the Centennial Exposition of 1876. The manufacture of trimmings on a wider scale was first undertaken; then that of ribbons came; soon afterwards that of brocaded and colored silks and satins, followed by that of plain piece-goods. The manufacture of silk handkerchiefs received a remarkable impulse from the Exposition.\* At the present time, the domestic silk products are at least equal in value to the imported.† Many kinds of silk goods are no longer imported. This is the case not only with sewing-silks and trimmings, but with many articles of which the domestic production did not begin before the war, such as handkerchiefs and most kinds of ribbons. Other articles, again, are made little or not at all, especially the finest piece-goods. Between these classes comes the debatable ground, on which foreign and domestic silks compete. Here may be placed most dress silks. The domestic producers in recent years have been steadily increasing their hold on goods of this sort, and now supply much the greater part of their consumption.

This brief sketch of the history of the silk manufacture shows how different has been its development from that of other textile industries. The manufactures of cotton and wool attained a large growth and a firm position long

\*See the sketch in Mr. Wyckoff's *Silk Manufacture*, especially pp. 42-51.

†Mr. Wyckoff estimated the value of silk goods made in 1886 at about \$60,000,000, probably a liberal estimate. The declared value of the imports in recent years has ranged between \$30,000,000 and \$35,000,000. Making allowance for duties and for undervaluation of imports (said to average at least twenty-five per cent.), we may conclude that the American public pays out about as much money for domestic as for foreign silks.

before the Civil War, while that of silks is, in the main, of very recent date. Silks are still imported more largely than other textile goods. The explanation of these facts must be sought in the character and processes of the industry.

The peculiarities of the silk manufacture are the result of the qualities of silk fibre.\* Raw silk is not made in the United States. Spasmodic attempts to encourage its production have been made, by bounties during the colonial period, by premiums in the early years of our national existence. At the present time there is a feeble attempt to establish it in California. The hopelessness of these attempts has permitted raw silk to remain on the free list, and the entire supply is obtained by importation. The raw silk so imported differs in marked ways from cotton and wool. In the first place, it corresponds not so much to raw cotton as to cotton carded and spun. It has been reeled from the cocoons, perhaps rereeled; and on the character of the reeling depends mainly the quality of the fibre.

There is found on the outside of every cocoon a considerable amount of light thread, containing more or less roughness and impurity, and, in general, unfit for reeling. This ought to be stripped off entirely, and accounted as "waste silk"; but some of it occasionally finds its way to the reel, in inferior grades of the raw material. When a filament that is fit for the reel has been reached, it is found that this filament is itself uneven in strength and thickness, the exterior layers being weaker and thinner than those nearer the insect. It is the business of the experienced reeler to put a thread of an even thickness and strength on his reel. To do this, he may have to unite four, five, or more filaments, from different cocoons, on a single thread, the number of filaments depending on their comparative thickness and the size of the thread required.

\*The description of the silk industry in the following paragraphs is derived largely from Mr. Wyckoff's instructive book on *The Silk Goods of America*; and the quoted passages are taken thence, unless credited to other sources. This volume is not to be confounded with the same writer's *Silk Manufacture*, to which reference has been previously made.

But, even after this laborious preparation,—which, we may note here, goes far to account for the failure to produce raw silk in this country,—the fibre is by no means of homogeneous quality, and by no means ready for the machine.

There are about a dozen distinct processes which raw silk must undergo to prepare it for the loom. . . . In each of these processes, except dyeing, imperfections in the thread cause loss of time and material. Suppose, for instance, that the raw silk, as imported, is uneven. That is to say, the continuous thread which is to be wound on a spool is found to be of irregular thickness as it unwinds from the reel. Such a thread is stronger in some parts and weaker in others. What happens? Probably the thread breaks in the first winding from the reel. The winding machinery stops automatically, and perhaps a portion of the thread which is weaker than the rest has to be pulled off and thrown aside as waste silk. Then a knot must be tied, and the winding goes on again. But, if the raw silk is very irregular in thickness, a similar accident can happen in any of the subsequent processes; a loom may have to be suddenly stopped. It is always the same story,—breakage, stoppage, waste of time (labor) and material. The loss of time, when machinery, running at high speed, has to be stopped, becomes a serious matter, from the mere fact that there is no production during the stoppage. "It costs," said a manufacturer, "fully five times as much to tie a knot in this country as in France."

To eliminate, as far as possible, defects of this class, silk is subjected to a series of sortings between the steps of its progress from the cocoon to the loom. . . . Our manufacturers take more pains than formerly to make their own sorting of the raw material fairly accurate, previous to the first winding. Moreover, at a later stage, before they are dyed, the threads are weighed with exactness by a mechanical process called "drumming," and sorted again. . . .

One of the preparatory processes that precede weaving has been mentioned as "picking." This consists of spreading out every thread of the warp separately, examining it with the utmost minuteness, and removing all knots, slugs, and irregularities. A large number of slowly moving threads are spread out like a huge fan; while keen eyes are bent upon them, and nimble fingers seize and extract the imperfections. . . . In Europe, where weaving is done mostly by hand, picking is part of the business of the weaver: he stops his loom at any moment to remove a knot or slug from the thread as it is woven. He is expected to turn out goods free from defects of this

character. The system here is entirely different, and it is necessary to have all the threads of warp and woof as perfect as possible, so that there shall be no stoppage of the power-loom.

The concluding words of this passage point to the striking contrast between the methods of the silk manufacture in this country and in those parts of France and Germany which still remain its chief seats. We cannot describe this instructive difference better than by quoting again from Mr. Wyckoff:—

The system of manufacture in Europe is entirely different from that which has grown up in this country. Judged from our point of view, the European manufacturer seems rather to be a mere contractor. He buys tram and organzine,—*i.e.*, filling and warp,—which have been made at a separate factory. He sends this material to another establishment, a dye-house. Finally, he puts it out to weavers who have looms in their own homes. He has no factory and no machinery. Under such circumstances, it is not surprising that there is little improvement in machinery and methods from year to year. Our manufacturers have been obliged, on the contrary, to concentrate the work, so as to keep every portion of it under direct supervision. In several of our large silk mills, all the different processes are conducted under a single roof. . . . There is a marked disposition to try improvements in this country; and it is the general experience that the very best machinery, though at first far more costly, is in the end decidedly the cheapest. . . . The American system is largely a consequence of substituting machinery for hand labor.

A struggle thus seems to be going on in the silk industry between large factories and machinery, on the one hand, and household industry and manual labor, on the other. It is the same contest as that which went on in the cotton and woollen manufactures at the close of the last century and the beginning of the present, but with the conditions much more favorable to the survival of the old-fashioned system. The silk fibre is much less adapted to the complicated and rapidly moving machinery of textile manufactures than are cotton and wool. It is not surprising, after reading Mr. Wyckoff's description, to

learn that four-fifths of the looms in the city of Lyons are still hand-looms,\* and that Crefeld, the chief seat of the silk manufacture in Germany, is a town of household operatives. The necessities of the situation compel the silk manufacturers of this country to attempt the substitution of machinery for hand labor and the use of more elaborate and more efficient methods. Such a change alone will enable the manufacture of an article as easily transportable as silks to hold its own side by side with the agricultural industries in which by far the greater part of our population is engaged. The endeavor shows itself not only in the concentration of the manufacture, in the invention and increasing application of labor-saving machinery, in the use of power-looms instead of hand-looms, but also in the strenuous efforts to secure raw silk of more even and uniform quality.† The preference of American manufacturers for the best grades of raw silk, and their willingness to pay good prices for it, are not the result, as one might infer from some allusions to it, of any special virtue on their part. They are due simply to the necessities of the industrial situation. The more uniform

\* The United States consul at Lyons wrote in 1883 that, of 120,000 looms in that city, but 20,000 were power-looms. *Reports of the Consuls of the United States*, July, 1883, p. 77.

† "In Italy and in France there are two classes of silk produced: 'country silk,' which is reeled in households and by primitive methods; 'filature silk,' which has been reeled with skill and sedulous care in filatures. The 'country silk' is, of course, inferior, and very little of it is sent to this country, because it requires much labor to be expended on it in manufacturing processes. The factories of Europe, where labor is cheap, can use inferior silk to better advantage than is possible in America. The silk produced in China is, in the first instance, 'country silk'; and, to prepare it for this market, it has to be rereeled. The Japanese now have filatures, and send us silk equal to the best of European. In Asia, as in Europe, the coarser and inferior silks are kept at home; America gets the finest and best." Wyckoff, *Silk Goods*, p. 11.

On the same page, we are told that "reels for this purpose [rereeling] were in the first instance made here and sent to China; their use was brought about by the urgent and repeated representations of American merchants there." The large growth of Japanese shipments of silk to this country is said to be due to the intelligence and adaptability which the Japanese have shown in improving the reeling of silk.

the material, the more can machinery be used; the greater the use of machinery, the better the chance of the American producer.

Hence we find that the various branches of the silk manufacture have been put in a firm position in proportion to the possibility of using machinery. Sewing-silk, the earliest branch and the most firmly established, is the product of American inventions. It is not surprising that machinery should be readily adapted to the comparatively simple processes of twisting several fibres together, and then winding and spooling them,—which are the essential processes in making sewing-silk and machine-silk. Another illustration of the same tendency, and a most instructive one, is in the successful manufacture of "spun-silk" goods. These are made from waste silk; that is, from the fibres of damaged or incomplete cocoons, from those which are thrown aside as unfit for reeling in the filatures, and from the tangled waste left in the earlier operations of the silk mill. These fibres are carded and spun by methods very similar to those used for cotton, and they produce "a material of such perfect uniformity that the thread to be made from it can be produced with absolute mathematical accuracy of any required size." The silks made from it were the original "American silks"; they are made with abundant use of machinery; they are cheap, durable, and good. But, unfortunately, they lack a certain lustre, an agreeable softness, and a peculiar rustling sound much prized by our better-halves. They are "hard," as we are told. Those qualities in the fibre which make silks agreeable to their chief consumers seem to be lost in the processes of carding or rapid spinning, and spun-silk goods fail to displace the more insinuating articles which come from the reel. Yet their consumption has steadily increased. By mixture with reeled silk, and by other improvements, their quality has been made more agreeable.

They are said to be specially well adapted for silk prints, and in the production of these the characteristics of American manufactures are again illustrated. "In Europe, printing is done with little blocks, a few inches square, which are slowly and more or less imperfectly used in hand work. Here, ingenious machinery is employed, printing many colors at once. A machine for this purpose requires a special engine to drive it, in order to have it under absolutely accurate control as to speed, pressure, and registry. Patterns that cannot be perfectly matched by hand may be turned out faultlessly by such machinery."

The answers to the questions presented by our sketch of the history of the silk manufacture now suggest themselves. The nature of the silk fibre is an obstacle to that extensive use of labor-saving machinery which is characteristic of American industry. The field is not promising for the ingenuity and inventiveness which give American manufactures their distinctive advantages. The same reason, no doubt, explains why in Europe the silk manufacture has its chief seats in France and in Germany, and not in England. While England's textile manufactures have in general maintained their superiority over those of the Continent, the silk manufacture continued to call for protection long after the general policy of free trade had been entered on, and, in fact, suffered under the reduction and final repeal (1860) of duties on silks. The conditions on the Continent are more favorable to industries in which there is comparatively little use of machinery.

It may indeed happen that Yankee ingenuity will revolutionize the conditions of this industry. The attempts of the American manufacturers to get a more even supply of raw silk, and to apply machinery to its conversion into silk goods, may prove successful, if not throughout the industry, at least in many parts of it. The progress of the silk manufacture in recent years has been extraordinary.

Ten or fifteen years ago, American dress silks were hardly heard of, and such as existed were of harsh and poor quality. At present, much the larger part of the dress silks which are used are of American make, and they are inferior in quality to none but the choicest imported goods. The dress silks which continue to be imported are largely figured silks. Of such goods, no great quantity of any one piece can be made with profit; there are not likely to be many purchasers whose tastes will be hit by any particular pattern. It does not pay to make goods of this sort on the power-loom, which like all expensive machinery, is profitable only where it works continuously and turns out large quantities at a time. The hand-loom turns out less at a time, and is more easily transferred to a new pattern. Figured silks are therefore more often made in the old way, and for that reason again are largely imported. Probably the same conditions hold good, in greater or less degree, of other imported silk goods. The very finest qualities of dress goods, such as require much individual attention from the workman,—laces, some sorts of embroideries, velvets, and goods which are half silk, half cotton, or wool,—make up the greater part of the importations.\* But with dress goods, as with handkerchiefs, ribbons, upholstery silks, the American manufacturers have well-nigh driven out their foreign competitors. They would continue to hold their own, even if duties were considerably reduced.

What the position of the silk manufacture might be if duties were entirely swept away, it is impossible to say. Some branches of the manufacture would probably hold their own, while others would disappear. Should there continue in the future a progress such as has un-

\* I must confess that I have found no clear explanation of the continued imports of some silk goods; e.g., goods of mixed materials. Possibly it is simply a matter of habit and of inexperience among domestic producers; but I suspect there is some deeper reason.

doubtedly been made in recent years in the American silk manufacture, it may happen in the end that most sorts of silks will be made here as cheaply as abroad, and that the abolition of protective duties would affect the silk manufacture as little as it would now affect the bulk of the cotton manufacture. If this proves to be the case, we shall have an example, and a striking one, of the successful application of protection to young industries. It is unlikely that any attempts at silk-making would have been made here but for the high duties of the war, and such progress as the manufacture has made may be fairly ascribed to the stimulus of protection. It remains to be seen whether this progress will be continued so far as to attain the true end of protection to young industries,—the supply of the commodity at a price below that of the foreign article. The nature of the fibre makes it improbable that there will ever be any such complete application of machinery as in the manufacture of cotton and wool; but no man can say it will not be done, for the march of invention brings many surprises. The question turns, however, on this: Unless there is continued application of machinery and continued invention of labor-saving processes, such as will make labor here more efficient than abroad, then, so long as our general economic conditions bear their present relations to those of Europe, we cannot expect the growth of a varied and independent silk manufacture.\*

\*Before leaving this topic, a word may be said on another explanation of the silk situation. Mr. J. Schoenhof, in his volume on *The Industrial Situation*, chapters vi. and vii., has come to the conclusion that the real cause of the continued imports of silks is to be found not in the conditions of the industry, but in the practice of adulteration by foreign manufacturers. He gives striking illustrations of the extent to which foreign silks are loaded with dyestuffs. Sometimes four-fifths of the weight of a piece of black silk is dye, and but one-fifth silk fibre. No doubt silks often are greatly adulterated, and very likely the practice has been more widely resorted to because of the desperate efforts of French and German manufacturers to keep their hold on the American market, in face of the high duty and the growing domestic manufacture.

We will now turn to the glass manufacture, which presents a set of phenomena analogous to those we have noted in the silk trade, and in some respects even clearer and simpler. Some sorts of glass are imported steadily in large quantities, notwithstanding high duties; other sorts are not imported at all, though the duties on them are comparatively low.\* As a glance at the table will show, the imports of plate-glass are three or four times as large as the domestic production, although the duty is very heavy, being more than a hundred per cent. on the large sizes, which are chiefly imported. Window-glass is produced in this country in greater quantity, yet even of this the imports amount to about one-third of the total consumption. The duties are specific, like those on plate-glass, and are again very heavy, amounting to one hundred per cent. on the larger sizes and to sixty per cent. on the smaller. On the other hand, the imports of ordinary moulded and pressed glass are insignificant, while

The practice is a phase, perhaps temporary, of the struggle between the old and the new methods of manufacture. But, if unadulterated American silks really satisfy the wants of consumers, and, quality for quality, are cheaper, they will hold their own in the long run, and will conquer the market, even though the change in the direction of consumption may take place slowly in the case of an article so much affected by fashion and prejudice. If, on the other hand, foreign silks, adulteration and all, prove permanently more pleasing to the consumers, whose tastes must in the long run decide what is wanted, American manufacturers will hardly hesitate—and, in fact, do not hesitate—to resort to similar adulteration. It may be, indeed, that there is a greater possibility of adulterating successfully under European than under American methods. Mr. Wyckoff tells us that "all the processes from first to last by which an inferior article can be made to appear equal to that of a higher grade are costly in labor" (*Silk Goods*, p. 20). This is a significant circumstance, and very likely goes far to explain the alleged greater purity of American silks. On the whole, while adulteration is one of the things that must be taken into account in explaining the present situation, the fundamental explanation seems to me to lie in those conditions of the industry which were described in the text, and of which, for that matter, Mr. Schoenhof's interesting account supplies excellent illustrations.

\* The figures in the following table give the value of the product of glass-ware in the United States in 1880, as reported in the census, the value of the imports in the fiscal year 1879-80, and the rates of duty on the various sorts of

the domestic production of articles of this sort, chiefly table-ware, is enormous. The census returns of 1880 do not distinguish, as do the customs returns, between the different sorts of "glassware"; but the bulk of the large quantity of glassware produced in the country was common and inexpensive pressed glass, very little being cut or ornamented glass of an expensive sort. Yet the duty on plain glassware is only thirty-five per cent., and that on other glassware only forty per cent. The situation is much the same with glass bottles, the domestic product being large, the imports small, and the duty comparatively low.

As we might expect from these facts, the methods of production are very different for the different sorts of glass. Window-glass—to begin with an important and typical article—continues now to be made in very much the same way as in past generations, nor is there any appreciable difference between the methods of manufacture in this country and in Europe. The most important operation is that of blowing the glass. The molten material is gathered on a block of wood, and then blown into a cylindrical shape having walls of the thickness desired

glass. Where the duties are specific, as on plate and window glass, they have been reduced to an ad valorem equivalent for those qualities which are most largely imported. The figures indicate thousands of dollars. In comparing the imports and the domestic production, the former must of course be increased by the amount of the duties:—

	Imports.	Duty.	Value of product in U.S.
Plate-glass,	1,715	60 @ 100%	868 (a)
Window-glass,	1,427	60 @ 100%	5,047
	38	35%	
Glassware,	722	40%	9,568
Plain, moulded and pressed, Cut, engraved, painted, or stained, Manufactures otherwise provided for,	961	40%	
Green glass (bottles),	44	35%	5,670

(a) Since 1880, the production of plate-glass has increased greatly, but the imports also have increased.

for the glass. The cylinder is then loosened from the blow-pipe, split open, flattened, annealed, polished, and cut into regular shapes. In all these operations "there has not been a single inch of progress since the day when cylinder-glass was first made." Moreover, "from the very nature of the business, it is absolutely impossible to use machinery in it. The inventive genius of the American people cannot be brought to bear effectively in making window-glass. The business has to be a pure manufacture,—manual labor."<sup>\*</sup> If the processes are the same as in Europe, and the capacity and energy of the American laborers are not much greater, obviously the lower wages which the foreign manufacturer pays will enable him to offer window-glass at lower prices than his American competitor can afford. It is not surprising, therefore, that window-glass continues to be imported in face of a very high duty.

On the other hand, the manufacture of pressed glass is distinctively an American industry. "In glass-making, as in other industries, the scarcity of skilled labor drove our people to devise means for accomplishing work without its aid. We were naturally driven to machinery. To ob-

\*I quote from the argument of Mr. E. L. Day, a glass manufacturer who appeared as the representative of the American Association of Window Glass Manufacturers before the Committee of Ways and Means in 1884. *Congressional Documents, House Reports*, 1883-84, pp. 236, 257. Remarks of the same tenor are in Mr. Charles Colnd's excellent report on glass in *Reports of the United States Commissioners to the Paris Exhibition of 1878*, vol. iii. p. 347. Indeed, it would seem that in one respect the methods of manufacture are more advanced in Europe than in this country. The American manufacturers themselves tell us that they generally carry on their business on a smaller scale than do their foreign competitors. See Mr. Day's statement, as cited above, p. 256. Before the Tariff Commission of 1882, the spokesman of the window-glass manufacturers said that the concerns in the United States were, on the average, only one-seventh as large as in European countries, and pleaded that "the general expenses of conducting the business of such large establishments, as is well known, make an enormous difference in the cost, enough for a fair profit to the foreign manufacturer." *Tariff Commission Report of 1882*, p. 2000. It may be noted, in this connection, that the use of gas-furnaces, a great improvement in the industry, came much earlier in Europe than in this country. *Colnd's Report*, p. 332; *Census Report of 1890 on Glass*, p. 37.

viate hand-blowing, a process which is very difficult to master, shaping with press and iron moulds was substituted. The beneficial results of this invention are incalculable. It placed our manufacturers in a position to make regular and cheap wares, while skilled labor became no longer necessary. The simplicity of the operation of pressing glass was such that in a very short time men could be trained to perform the work. . . . Then came improvements fast and thick in combinations of the different pieces of moulds,—improvements in presses, and tools for holding the pieces while being fire-polished."\* The invention of the process goes back to 1827, when the first press, for moulding tumblers, was made.† Since that time, the manufacture of flint-glass, which is chiefly table-ware made by pressing, has flourished.

Before the Civil War, no permanent success was attained along the seaboard in the manufacture of window and bottle glass. In Pittsburg and other places west of the Alleghanies, window-glass works were established at an early date. Fuel and materials were abundant; and the heavy cost of inland transportation, before the days of low railroad freights, prevented any effective competition from imported glass. Near the seaboard, however, no window-glass or bottle-glass was made.‡ The manufacture of pressed glass, on the other hand, grew and prospered. From the beginning, the United States have led all countries in this branch of the industry. Many articles which elsewhere are made by blowing and subsequent

\* Colnd's *Report*, as referred to above, p. 377. See also Mr. J. D. Weeks's report on glass, in the volume on manufactures in the *Census of 1880*, p. 47. Accounts of the various improvements in the pressing process are given by these writers in the passages referred to.

† Report on glass, *Census of 1880*, p. 58. Presses for simple articles seem to have been in use in England and Holland before this date. Jarves, *Reminiscences of Glass-making*, p. 93.

‡ Mr. Jarves, in his *Reminiscences*, p. 65, alludes to "the repeated failure of permanently establishing window and bottle glass works in this vicinity" (New England).

shaping with simple slow-working tools, are here made, as well or better, by pressing. So far has that process been perfected that it requires a practised eye to distinguish the best pressed glass from cut glass. Mr. Coln , in his report on the glassware exhibited at the Paris Exhibition of 1878, repeatedly commented on the superiority of American pressed glass.\* It is regularly exported in considerable quantities to Canada, the West Indies, South America, and even to Europe. If our tariff system were made more liberal, the general lowering of the scale of prices which would probably ensue would no doubt cause the exports of pressed glass, as of other manufactured articles, to increase rapidly.†

The manufacture of plate-glass presents a curious case, typical of one phase of the operation of the heavy duties imposed during the Civil War. Before 1860, plate-glass was not made in this country at all. During the war, high duties were imposed on it, and properly enough; for plate-glass is as purely an article of luxury as could be found. These duties were retained after the war closed, and, like so many others, remain now substantially as they were fixed in 1864. At first, they operated simply as revenue duties. As they were retained, however, and the price of imported glass was kept high, capital was attracted to the domestic production of plate-glass. In 1869, a factory was built in Indiana, and a few years

\* "The American pressed glass drew from the European manufacturers exclamations of astonishment when they saw the clearness, smoothness, and brilliancy of this glass, the freedom from mould-marks, and the superior execution in general. Frequent inquiries were made as to the mode of working. This was a positive proof that they consider us superior in that line. In fact, many manufacturers frankly acknowledged to me our uncontested superiority in pressed glass. Nothing could be seen elsewhere equaling our samples." *Report*, p. 365. Compare also p. 387 of the *Report*.

† The exports of glassware, which consisted almost exclusively of pressed glass, were \$750,000 in 1885, and \$774,000 in 1886. Mr. Coln , in his *Report*, p. 255, said that, "were it not for the difficulties created by the French tariff, American pressed glass could be exported to France with advantage."

later another was built in Missouri.\* A few others have since been added, and at present a large amount of capital is sunk in them. The business is one which must be conducted on a large scale, and requires much fixed capital, in the shape of buildings, furnaces, ovens, and machinery for handling the plates. The process consists, in essentials, of casting the glass in plates, which are then ground, smoothed, and polished. The conditions seem to be somewhat different from those of manufacturing window-glass, where hand labor plays a larger part; there seems to be greater opportunity for the use of machinery. But the machinery in this country seems to be the same as that used abroad, and the skilled laborers have been brought hither from foreign countries. The conditions of production are essentially the same as in Europe; and, so long as this is the case, the lower wages paid there enable plate-glass to be put on the market at a lower price. Imports to this country therefore continue, notwithstanding our high duties. It is not impossible that American ingenuity will find in this industry a congenial field, and that improvements in methods and machinery will eventually enable plate-glass to be made here as cheaply as abroad. But, if it be true, as the manufacturers state, that they cannot submit to any reduction of the present very high rates, no steps in this direction have yet been taken. The duty so far has operated purely and simply as a protective duty.

The manufacturers assert that the price of plate-glass has been reduced by their competition. The price of plate-glass has undoubtedly gone down very much in

\*See the statements made in 1884 before the Committee of Ways and Means by Mr. E. A. Hitchcock, for the Crystal Plate Glass Company of Missouri, and by Mr. W. C. DePauw, the owner of large works at New Albany, Indiana. *House Reports*, 1883-84, pp. 279-287. Mr. Hitchcock argued with much force that, since the duties on plate-glass had remained unchanged for thirteen years preceding the date (1876) when his corporation engaged in the business, it would be a breach of faith to reduce the duties in such way as to cause the loss of their capital.

recent years; but, since imports have continued regularly, the price here has been presumably higher throughout than the price abroad. I say "presumably," because it is also asserted that the foreign producers of plate-glass have combined; that prices are not governed by competition and cost of production, but are fixed under conditions of monopoly; and that lower prices are offered in the United States because of our heavy duties. No doubt it is true that, where an article is monopolized and yields unusual profits, a duty, whether it stimulates domestic production or not, may cause the foreign producer to content himself with lower prices and lower profits. Under such circumstances, it may happen that the foreign producer rather than the domestic consumer bears a part or the whole of a duty. Whether this has been the result of the duty on plate-glass is not clear. On the one hand, the foreign manufacturers are few in number, produce on a large scale, and might well combine effectually. On the other hand there are establishments in various countries,—France, Belgium, Germany, and England; and an international combination is less likely to hold together than one between persons in the same country. Statements as to combinations abroad, when made by protected competitors here, must be received with a good deal of caution.

In the manufacture of glass bottles, the general conditions are similar to those already described for window-glass. The glass is blown. Moulds are used to some extent, but little machinery.\* No doubt the characteristic differences between European and American processes show themselves in this industry. For example, the older method, still in general use abroad, was to apply a mould only for shaping the lower part of the bottle, the neck being separately shaped with pincers and forming blocks.

\* "There is no machinery used in the making of bottles, nothing but hand labor is used." Statements made in 1884 before the Committee of Ways and Means, as cited above, pp. 292, 293.

Recently, metallic moulds, into which the whole bottle is blown at once, have been invented, and are in general use in this country; but in Europe the old process was still common when Mr. Coln   reported on the glass manufacture in 1878.\* On the whole, however, the industry does not seem to be one adapted to American methods of production. If we find, nevertheless, that few bottles are imported and many are made within the country, the explanation, no doubt, is to be found in the heavy cost of transportation, which gives what we may call a natural protection to the manufacture of articles so cheap and bulky as glass bottles. Even in earlier years, when duties were low, bottles were regularly manufactured, especially in places distant from the seaboard. Before the days of railroads, the heavy expense of inland transportation gave a stimulus to the manufacture of bottles, as well as of window-glass, at places like Pittsburg and Wheeling, which were near the sand, fuel, and other needed materials. In our own time, the expense of inland freight is still a premium to establishments in these places. The use of natural gas in recent years has given them a great advantage; and it is probable that they would now be little affected by a reduction of duties, except in their sale in the seaboard markets.

It would be possible to present many other illustrations of the principle which has been brought out in the discussion of silks and glassware. Earthenware continues to be imported into the United States, notwithstanding a very heavy duty. Under the low duties that prevailed before the Civil War (the duty was thirty per cent. under the act of 1846), only the cheapest and heaviest sorts of earthenware were made, such as stone jugs, drain-pipes, brown and yellow ware. The heavy cost of transporting these articles no doubt explains why they were not imported. Table-ware was supplied exclusively by importation.

\* See that gentleman's *Report*, as cited above, pp. 258, 306.

During the Civil War, duties were raised to forty-five per cent. on plain ware and fifty per cent. on decorated; and, in the act of 1883, these rates were again increased to fifty-five and sixty per cent. respectively. Under these duties, a considerable manufacture of pottery and earthenware has developed; and, at the present time, common white ware is no longer imported. But there is still a large importation of colored ware and of all sorts of finer porcelain and china. The domestic producers of tableware supply no more than half of our consumption of china and earthenware, and most of them would probably have to go to the wall if the duties were removed.\* The explanation of this state of things, strikingly in contrast with the early and assured growth of the manufacture of pressed glass, is that the potter's art has had little share in the improvements which have revolutionized so many branches of industry within the last hundred years. The potter's wheel is still the basis of the industry. The cheapening of transportation has caused the manufacture to be concentrated in larger establishments, and perhaps in fewer places, than could be found fifty or a hundred years ago; but there has been little introduction of machinery and no essential change in processes. The very mixing of the materials, which might be expected to give a good field for using power and machinery, is still done mainly by hand, attempts to use machinery having failed to hit the exact qualities wanted. Earthenware of a cheap and bulky sort is more likely to be made in large quantities of a single pattern, and affords more opportunities for using moulds, some little machinery, and labor-saving devices; it is, besides, more expensive to transport; the

\* The reader will find the materials on which this sketch is based in the report on pottery in the *Reports of the United States Commissioners to the Paris Exposition of 1878*, vol. iii. pp. 190-195; an account of the pottery manufacture in *Bradstreet's*, March 6, 1886; statements of manufacturers in *Tariff Commission Report of 1882*, pp. 613, 743, 1949; and in the statements made in 1884 before the Ways and Means Committee, *House Reports*, 1883-84, pp. 241, 244.

cheaper qualities of table-ware are consequently produced in the United States under the present high duties. The finer goods, however, where each individual piece needs more attention and requires more labor, are made in England, France, Bohemia, and are imported in face of the duties. They will doubtless continue to be imported unless our industrial conditions change greatly, or the future brings forth a series of inventions that will make the industry suited to our present conditions.

The manufacture of cutlery supplies another illustration of the uneven development of industries which are on the surface closely allied. The duty on cutlery is fifty per cent., yet there is a large and regular importation of pocket-knives. On the other hand, table cutlery, subject to the same duty, is practically not imported at all. There is a slight importation of table-knives made by certain English firms, whose products a few people, from habit or prejudice, persist in preferring; but the bulk of the table-knives used are of American make, and are as cheap as goods of the same quality are abroad. The industry being concentrated in a few large establishments, there is a strong temptation to combinations; and every few years there is a combination of the American manufacturers, which advances prices, keeps them high for a while, and then goes to pieces. But the knives are made as cheaply as they are in England or other countries, and are nominally sold at prices as low. Pocket-knives and razors, however, although made to a considerable extent, cannot be made so cheaply as in England and Germany, and continue to be imported in face of the duty. The explanation is again that machinery can be applied to the one much more than to the other. Table-knives are made in large quantities of a single pattern; they have comparatively few pieces; the blades need no very careful grinding, and grinding is still done largely by hand. A pocket-knife is a more complex thing; the pieces need to be put

together by hand, they must be made to fit neatly, the blades must be carefully ground. If the various parts of a pocket-knife could be struck off by machinery, in hundreds or thousands, perfect and complete, and then easily put together, pocket-knives would doubtless be made in this country with complete success. Watches can be made after that fashion, and afford a striking example of American enterprise, ingenuity, and success. But pocket-knives need to be of numberless patterns. The jobbers and retailers, who presumably know the likings of consumers, want few knives of any one style, and want new patterns every season. Obviously, production on a small scale, with little machinery, in the German fashion, accommodates itself to such a capricious demand much more readily than the American plan of using plant, machinery, and an inflexible process.

Indeed, pocket-knives are an exceptional article. Most smaller articles of hardware seem to afford favorable opportunities for the inventive talents of American workmen and business men. All sorts of complicated articles—watches and locomotives, door-knobs, locks, hinges, house hardware and household utensils, spades, axes, agricultural implements—are not only made cheaply and successfully at home, but, in spite of the higher price of the materials of which they are made, are regularly exported in large quantities. Where a massive kind of production is called for, a huge plant, a steady routine, a rigid economy of materials, the organization rather than the saving of labor, the English in general excel. This is probably one cause of their commanding position as producers of the cruder forms of iron,—pig-iron, bar-iron, raw steel; though much is also due to the great advantage of having rich supplies of coal very near the iron ore. In manufactures of a more delicate and refined character, if I may use such adjectives in this connection, the Americans excel. Where the nature of the material or of the product gives opportunity for

the deft use of labor-saving devices, the ingenious adaptation of a tool to just the use desired, the constant application of new inventions, American manufactures are likely to hold their own, tariff or no tariff.

In the course of the reaction which has taken place in political economy in recent years, the disposition to question the merits of the classic school has extended, first and last, to about all of its doctrines. Doubts have been expressed, not only on the theory of distribution, where there was perhaps most occasion for restatement and revision, but also on the principles of international trade, which, on the whole, needed less remodelling than any other part of the classic structure. Dr. Ingram—to take an English representative of the reaction—admits Ricardo's theory of comparative costs to be "just and interesting"; but, when Cairnes describes it as "sounding the depths" of international trade, Dr. Ingram finds the phrase magniloquent.\* Professor Held,† eminent and lamented among the Germans of the new school, considered the theory a curiosity in economic literature, and handled it with very scant respect; though it is but fair to add that, as is often the case with the protesting economists, his own discussion showed, in its details, less real divergence from the classic doctrine than his depreciation of it would lead us to expect. To the present writer, it seems clear that the phases of our economic history which have been examined in the preceding pages can be explained at bottom only on the theory of comparative costs, which, as he ventures to assert even at the risk of being thought magniloquent, sounds the depths of the international trade of the United States. The reason why the Amer-

\* Ingram's *History of Political Economy*, p. 134.

† In the *Jahrbuch für Gesetzgebung*, iii. pp. 179-182. The essay on "Protection and Free Trade," in which the reader will find the passage here referred to, is in general sound and conservative.

ican farmer does not produce flax fibre is not to be found in any obstacles from climate or physical conditions. His labor would yield as much flax, absolutely, as that of the European cultivator. He simply finds that his labor yields more in other branches of agriculture. His case is the same with beet culture. Silks were imported before 1860 not because of any inferior productiveness of American labor in making them; it was because of a lack of that superiority which existed in other directions.

In both of these great branches of production, account must be taken of moral and intellectual as well as of physical causes of a comparative advantage. The classic economists did not often trouble themselves to analyze the causes of the differing effectiveness of labor in different countries, and perhaps reasoned too much as if these causes were all of a physical and unalterable sort. Adam Smith \* shrewdly perceived that the causes of the advantages one country has over another are not all of the same kind; but he pointed out with truth that, given the advantages, they determine the course of trade. The nature and the cause of an advantage become material only when we begin to inquire whether it is likely to persist indefinitely, and whether it can be affected by legislation. Obviously, a comparative advantage which rests not on physical causes, but on differences in skill, knowledge of the arts, mechanical training, shades of character and intelligence, may be influenced, within limits, by a stimulus in the way of premium or protection. The argument for protection to young industries applies only under conditions of this latter sort. Given those condi-

\* "Whether the advantages one country has over another be natural or acquired, is in this respect of no consequence. As long as the one country has those advantages, and the other wants them, it will always be more advantageous for the latter to buy of the former than to make. It is an acquired advantage only which one artificer has over his neighbor who exercises another trade; and yet they both find it more advantageous to buy of one another, than to make what does not belong to their particular trades." *Wealth of Nations*, Book IV., chap. ii.

tions, it may apply more widely than English economists have been disposed to grant. Protection to young industries, which Mill believed to be of possible advantage only in a young country in the earlier stages of growth, may have had occasional and unexpected successes even within the last twenty years. The history of the silk manufacture illustrates the possible turn of events; and the application of protection in the United States has been so sweeping since the Civil War that this case, while by no means typical of the usual effects, probably does not stand alone. But such exceptions serve here, as they do in all scientific investigations, to bring out the foundation of a general rule rather than to modify it. In the present case, they suggest a more careful analysis of the causes of comparative advantages in different countries, but do not affect the doctrine that these comparative advantages determine the sort of trade and division of labor that will take place between them. Such phenomena as have been described in the preceding pages still reduce themselves, in the last analysis, to illustrations of the doctrine of comparative costs.

F. W. TAUSSIG.

## ON CERTAIN PASSAGES IN JEVONS'S "THEORY OF POLITICAL ECONOMY."

THE diagrammatic method of studying economics may be regarded from three points of view.

(i.) Many teachers find in it a stimulating and helpful appeal to the eye, and use it as a short and telling way of making statements and registering results.

(ii.) A few students treat it as a potent instrument for giving precision to hypotheses in the first instance, and then for rigorously analyzing and investigating the results that flow from them.

(iii.) A very few investigators (among whom I think we must rank Jevons) have hoped ultimately to pass beyond the field of pure hypothesis and analysis, and to build up constructive results upon empirical curves of economic phenomena established by observation.

Precision and firmness in wielding the mathematical method as a hypothetical and analytical instrument are of the first importance; for, without them, all its other uses will turn out illusory. What may be called the "picturesque" use of diagrams, to illustrate theory, is fatally misleading unless an absolutely rigorous and precise interpretation is insisted on; and empirical or hypothetical data may be seriously misinterpreted, even by experts, for want of a sufficiently close preliminary analysis of the mathematical instrument of investigation.

I propose, then, to examine certain passages in Jevons's great work, in the hope of carrying his analysis a step further inward rather than of projecting his results further outward.

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(i.) "Gregory King's" estimate of the variations in the price of wheat.

The celebrated estimate of the probable effect of serious deficiencies in the wheat harvest, usually attributed to Gregory King, but perhaps due to Davenant, is made the subject of an interesting investigation by Jevons.\*

The estimate itself may be put into the following form: Taking 10 as the numerical value of the normal harvest and 1 as the normal price, it is estimated that we should have the price rising to 1.3 for a harvest of 9, to 1.8 for a harvest of 8, to 2.6 for a harvest of 7, to 3.8 for a harvest of 6, and to 5.5 for a harvest of 5.

Without inquiring into the grounds of this estimate, or making himself responsible for its correctness, Jevons tries to throw it into scientific form by deducing from it a law of price as a function of quantity. Taking the ordinates to register price, and the abscissas quantity, we shall have the following data:—

$x \dots 10$	$ $	$9$	$ $	$8$	$ $	$7$	$ $	$6$	$ $	$5$
$y \dots 1$	$ $	$1.3$	$ $	$1.8$	$ $	$2.6$	$ $	$3.8$	$ $	$5.5$

Of course there are an indefinite number of possible curves that pass through the six points thus indicated, and we shall be guided in our method of attack by any conceptions we may form on general grounds as to the probable form of the curve.

Jevons (p. 170) proceeds: "It is probable that the price of corn should never sink to zero, as, if abundant, it could be used for feeding horses, poultry, and cattle, or for other purposes for which it is too costly at present. It is said that in America corn, no doubt Indian corn, has been occasionally used as fuel. On the other hand, when the quantity is much diminished, the price should rise rapidly, and should become infinite before the quantity is zero,

\* *Theory of Political Economy*, second edition, pp. 167-172. I take it that the estimate refers to wheat alone. See Davenant, *Essay upon the Probable Methods of making a people gainers in the Balance of Trade*, pp. 80, 81. But in one passage wheat, barley, and rye seem to be included.

because famine would then be impending. The substitution of potatoes and other kinds of food renders the famine point very uncertain; but I think that a total deficiency of corn could not be made up by other food." These considerations lead Jevons to conjecture that the curve will be of the form  $y = \frac{a}{(x-b)^n}$ , and he fixes the constants so as to get a fair approximation to the values given in the estimate. He concludes, "Considering the close approximation in the above numbers, we may safely substitute the empirical formula for [Davenant's] numbers."

Now I submit that, in the first place, the estimate, whether founded on observation or conjecture, obviously refers to wheat exclusively in its capacity as human food. Indeed, it is distinctly implied by Jevons that it is not actually used for any other purpose. If we are to consider its use as food for horses or (when burned) as manure, we shall have to take into account another curve, which will follow its own law, and will have to be added laterally to the curve we are now examining, as soon as the latter descends low enough to be affected by it.\* But the fact that if wheat were cheaper people *would* buy it for horses, does not in any way, directly or indirectly, affect the price they really give, or the price they would give if the supply were *diminished*. Obviously, then, the law connecting the six points which constitute our data must be independent of such possible uses of wheat as are wholly inoperative throughout the region over which our observations (or conjectures) extend. In other words, our data belong to the curve that connects the price and the quantity of wheat as *human food*, and this curve will follow its own law independently of any other curves that may combine with it to form the total curve that gives the

\* This branch of the subject is well worked out by Walras in his "*Éléments d'Économie Politique Pure*. 11<sup>e</sup> Leçon, 30<sup>e</sup> Leçon *et passim*. Cf. my *Alphabet of Economic Science*, p. 60.

price of wheat as a function of its quantity. Now it is clear that a comparatively small increase of the supply of wheat would actually reduce its marginal degree of utility as human food to zero; that is to say, would give every potential purchaser as much as he wanted to eat. Our curve, then, must not, as Jevons thinks, be asymptotic to the axis of  $x$ , but must cut it for a comparatively low value of  $x$ .

Again, impending famine will not make the price of wheat infinite. There is no such thing as an infinite price. Whether or not there can be an infinite *utility* is a question of some interest; and I am prepared to defend a negative answer even to that. But there can be no question at all as to the impossibility of an infinite *price*. It is a contradiction in terms. Again, a total failure of wheat, or even of grain in general, would no doubt produce famine, but not amongst the wealthy classes, and famine amongst poor people could not raise the price of corn to any very high figure: they can but offer all they have, and before the price of corn has risen many hundred per cent they will have no power to purchase it; their demand will cease to be "effective." Amongst the wealthy people and their retainers there will be no lack of meat and potatoes, vegetables, fruits, etc.; and wheat-bread, though commanding a high price, will not be purchased, in appreciable quantities, at what we are accustomed to think of as extreme famine prices, for there will be no famine amongst the purchasers, there will only be a lack of *bread* in the literal and narrow sense. I must therefore again join issue with Jevons in his second assumption; viz., that before we get back to the origin, our formula ought to give us an infinite value for  $y$ . Indeed, it is pitiable to think how slight the rise would probably have to be in order to induce incipient "famine," and how false the inference that if people are dying for want of a thing the price of that thing must be "infinite."

Divesting ourselves, then, of Jevons's preconceptions as to the general form of the curve, and reserving our own preconceptions (*viz.*, that the curve will cut both axes) to act as a check upon our results, let us look for the simplest law we can find which unites the six points. It will appear that they do not lie on a conic. The conic fixed by any five of them does not pass through the sixth. We next try a curve of the third degree. If we assume the simplest form, *viz.* :

$$y = ax^3 + bx^2 + cx + d,$$

we shall find that the curve determined by any four of the points passes through the other two.\* Its formula will be

$$60y = 1500 - 374x + 33x^2 - x^3.$$

This curve cuts the axis of  $x$  between 13 and 14, and that of  $y$  at 25. These results have a *vraisemblance* which is truly remarkable when we consider how little right we have to expect such a curve as this to yield reasonable results when carried far beyond the limits of the data.

Such an outcome of our investigations can hardly fail to stimulate curiosity as to the origin of this most interesting estimate, and the grounds on which it was formed.

#### (ii.) Dimensions of economic quantities.

There are no portions of Professor Jevons's great work that are more difficult or (as I think) less satisfactory than the sections on the dimensions of economic quantities.

\* It may be conveniently found by the method of differences. Take four points:—

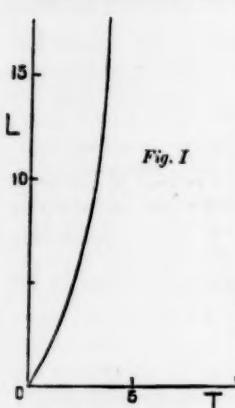
10	.	.	.	1		3	
9	.	.	.	1.3	2		1
8	.	.	.	1.8	3		
7	.	.	.	2.6		8	

It will be found that the law here suggested gives the other two points with perfect accuracy. I am indebted to Mr. John Bridge, of Hampstead, for suggesting the application of this method.

The previously uninitiated (of whom I am one) will be able to gather from the works of Professor Jevons himself that the theory of dimensions has been found a powerful instrument in the investigations of natural science, and will welcome his attempt to introduce the same method into economic studies. It is of vital consequence that we should have a precise conception of our several units and their relations to each other, if the mathematical method of economic study is to make any real progress; and the careful student will very rapidly learn to recognize in the theory of dimensions a valuable means of elucidating and checking his processes and results.

But the method, as applied by Jevons, appears to fit his diagrams singularly ill; and if it is to find any harmonious development in connection with them, some better principle of co-ordination must be sought.

Perhaps I shall be excused if I introduce the subject by a simple and elementary illustration of the theory itself, derived from the field of dynamics.

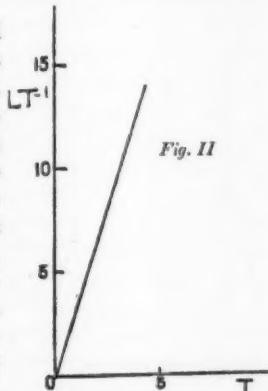


If we represent graphically the space which a body, falling from rest, traverses in any given time, under the action of gravitation, we shall have a curve roughly of the form of Fig. I., in which the ordinates represent length-space (10 feet to the unit), and the abscissas time (1 second to the unit). Here the dimension of the ordinates is *L*, or length, and that of the abscissas is *T*, or time. The *number* of the units contained in any ordinate is connected by a definite law with the *number* of the units contained in the corresponding abscissa ( $s = 16 t^2$ , in feet and seconds), but the *nature* of the units in either case

is entirely distinct. Thus the interpretation of an ordinate of a given length (when once obtained) is independent of the unit of time, because  $T$  does not enter as a dimension into the ordinates; but if I call a certain ordinate 10 when the unit of length is a foot, I must call it 120 if I change the unit to an inch. Again, if I call a certain abscissa 10 when the unit of time is a second, I must call it  $\frac{10}{60} = \frac{1}{6}$  when the unit of time is a minute. Thus the numerical expression for any quantity of one positive dimension must be increased when the unit of its dimensions is decreased, and decreased when it is increased.

Let us now, treating the number of seconds in the formula  $s = 16t^2$  as the variable, and the feet traversed as the function, differentiate the latter to the former. That is to say, let us find the *rate* at which increments of time are increasing the space traversed, at any point in the course of the body; or, in other words, let us find the formula, and the curve, which will give us the *rate* at which the body is falling, as a function of the time it has been in motion.

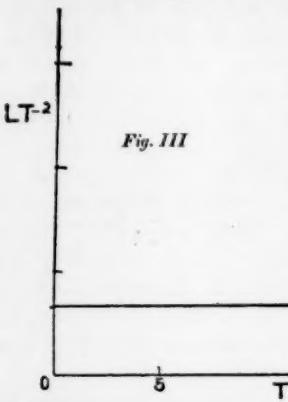
The formula, of course, will be  $v = 32t$ , and the curve is given roughly in Fig. II. Here the unit by which the abscissas are measured is the same as before. Their dimension is  $T$ . But the unit of the ordinates is no longer a unit of length. It is a unit of *rate*. An ordinate does not now represent feet, but feet-per-second. The unit of the new ordinates, then, is a unit of ratio between length and time, each measured in its own appropriate unit. Both  $L$  and  $T$  must therefore enter into the new ordinates as dimensions; but they do not enter upon the same footing.



Sixteen feet a second is the same thing as  $16 \times 12$  inches or  $16 + 3$  yards per second; that is to say,  $L$  enters as a dimension into the new ordinates on the same footing as into the old ones. But 16 feet per second is  $16 \times 60$  feet per minute; that is to say,  $T$  enters into the ordinates in the inverse relation of  $L$ . This is represented by saying that  $T$  enters negatively as a dimension. The dimensions of rate of movement will thus be  $LT^{-1}$ .

Since the process of differentiation always consists in establishing limiting *ratios* between increments of the independent variable and increments of the function, it will be clear at once from the above example that the dimensions of the variable must always enter negatively into the derived function, while the dimensions of the original function remain in the derived function positively.

Differentiating again, we shall obtain the rate at which the rate of motion is increasing, or what is usually called



the acceleration of the falling body. It is given in Fig. III. The dimension of the abscissas is still  $T$ ; but the variable of the function in Fig. II. having entered negatively once more into the ordinates, we shall now have  $LT^{-1}T^{-1}$ , or  $LT^{-2}$ , as the dimensions of the ordinates of Fig. III.

This indicates that if the unit of time be decreased, the numerical expression for acceleration must be

decreased in the proportion of the *square* of the new unit to the *square* of the old unit. Thus an acceleration of 32 feet per second is an acceleration of 8 feet per half-second; e.g., if gravitation is adding 32 feet per second to

the velocity of a body, in each second, it is adding 16 feet per half-second, in each second, and 8 feet per half-second in each half-second. The new unit being half the old unit, the numerical expression for acceleration must be altered in the proportion of  $(\frac{1}{2})^2 : 1^2$ ; i.e., must be divided by 4.

Now note further that in these successive figures an *area* in one always represents the same kind of quantity, and has the same dimensions, as the *ordinate* of its predecessor.

Thus on Fig. III. if we take the area above the abscissa 2, or  $\int_0^2 f''(x) \cdot dx$ , we shall, of course, have a quantity of the dimensions  $LT^{-2}T$ , or  $LT^{-1}$ ; i.e., a velocity. But the ordinates on Fig. II. are velocities. If, again, we take the area above the abscissa 2 in Fig. II., or  $\int_0^2 f'(x) \cdot dx$ , we shall have a quantity of dimensions  $LT^{-1}T$ , or  $L$ ; i.e., a length. But the ordinates on Fig. I. represent lengths.

It follows that there is no natural or inherent propriety in representing each actual dimension of the quantity we may be dealing with, by a dimension of space in a diagram, for we have seen that length and velocity may either of them be represented with equal propriety by a line or an area. In the same way area or volume itself may often be suitably represented by a line in a diagram. Again, there is no impropriety or inconvenience in making diagrams in which the same dimension enters positively or negatively into two or more axes. Thus, in our Fig. II.,  $T$  enters positively into the abscissas and negatively into the ordinates.

An apparent neglect of these considerations, which I am not able satisfactorily to explain, has, if I am not mistaken, introduced needless difficulty and obscurity into Jevons's investigations of the dimensions of economic quantities, and has robbed his results of lucidity, if it has not led him into positive error.

Instead of criticising in detail the passages in the *Theory of Political Economy*, in which this subject is treated, I will go over the ground which they cover, and ask the reader to compare my statements with those of Jevons.

We will begin with total utility. If we use capitals for dimensions and minuscules for the number of units (*e.g.*,  $T$  for the dimension time, and  $t$  for the number of seconds or other units of time), we may indicate the units of total utility resulting from any consumption of commodity by  $u$ , and the number of units in the corresponding amount of commodity by  $q$ . The fundamental quantitative fact with which Economics have to deal may then be expressed in the thesis that  $u$  is always a function of  $q$ .

Now Jevons shows that,  $q$  being the variable, the final degree of utility of a commodity is the differential coefficient to  $q$  of its total utility; whence it follows that, taking  $U$  as the dimension of total utility, and  $Q$  as the dimension of commodity, we shall have the dimensions of final degree of utility  $UQ^{-1}$ .

Jevons uses the symbol  $U$  to signify final degree of utility (*cf.* Jevons, p. 71), but I think this notation is calculated to mislead. I should suggest that when we wish to speak of final degree of utility without entering upon the analysis or history of the conception, we should indicate the number of units by  $v$ , and the dimension by  $V$ .

In comparing my formulae with Jevons's, therefore, it must be borne in mind that his  $u$  corresponds to mine; his  $U$  as a dimension corresponds to my  $V$  or  $UQ^{-1}$ ; his  $U$  as a quantity to my  $v$ , which will be the differential coefficient of  $u$  to the variable  $q$ .\*

\*In substituting  $Q$  for  $M$ , I follow the indications of Jevons himself. Preface to 2d edition, p. xi. On page 71 Jevons appears to use contradictory and inconsistent language with regard to "intensity of feeling," which he identifies in one place with "degree of utility" and more correctly defines two lines above as total instantaneous utility. The former of these quantities has the dimensions  $UQ^{-1}$ , the latter  $UQ^{-1}QT^{-1}$ , or  $UT^{-1}$ . *Vide infra*, I am indebted to Mr. W. E. Johnson, of King's College, Cambridge, for the elucidation of this point.

Now final degree of utility determines exchange value, and we have: Exchange value determined by  $v$  (of dimensions  $UQ^{-1}$ ); that is, by *rate at which increments of commodity are increasing total advantage derived from consumption*. In this sense the dimensions of "value in exchange" may be said to be  $UQ^{-1}$ .

Jevons prefers to regard total utility as a quantity of two dimensions,  $MU$ , corresponding to my  $QV$ , and final degree of utility as a quantity of one dimension,  $U$ , corresponding to my  $V$ . If we adopt this view, it would be proper to make final degree of utility our starting-point, and begin with  $v$  as a function of  $q$ . We should then integrate to obtain  $u$ , of dimensions  $QV$ . My objection to this is twofold; for total utility is susceptible of direct measurement by any standard of effort or endurance that may be selected (such as foot-tons of work done under assigned conditions), whereas final degree of utility\* is essentially a (limiting) ratio, and is therefore appropriately represented (like all ratios) as having two dimensions (whether simple or complex, homogeneous or heterogeneous) which enter the one positively and the other negatively.

Thus, if we say with Jevons that total utility has two dimensions,  $MU$  (our  $QV$ ), we must, I think, add that one of these dimensions,  $U$  (our  $V$ ), is a ratio, and not properly a dimension at all. In our notation it is equivalent to  $UQ^{-1}$ , and the dimensions  $QUQ^{-1}$  reduce to  $U$ .

In my view, it does not at all follow from this that there is any impropriety in representing total utility diagrammatically by area.† We shall do so whenever we

\* It must be remembered that when we speak of the direct measurement of final degrees of utility or value it is not really these quantities we are measuring, but the product of final degree of utility into a small increment of commodity. It is not  $\frac{du}{dq}$ , but  $\frac{du}{dq} \cdot dq$  or  $du$ ; i.e., a small increment, of dimension  $U$ , which we measure.

† Mr. Johnson informs me that writers on the Newtonian dynamics habitually represent linear space by area in their diagrams. This is obviously convenient.

draw curves of quantity and final degree of utility. The dimensions of abscissas will be  $Q$ , of ordinates  $UQ^{-1}$ , and of areas  $QUQ^{-1}$ , or  $U$ .

But Jevons points out that as a matter of fact it is not supply but rate of supply per unit of time, not total enjoyment but rate of enjoyment, with which we are concerned. Whether this is universally true in any fruitful and manageable sense or not, it is certainly true of all such commodities as food, water, etc. We must therefore take up the question again from this point of view. Regarding rate of supply per unit of time (dimensions  $QT^{-1}$ ) as the variable, and rate of enjoyment, relief, or advantage per unit of time (dimensions  $UT^{-1}$ ) as the function, and then differentiating, we shall find that the dimensions  $T$  cancel each other, and we have  $UT^{-1}Q^{-1}T$ , or  $UQ^{-1}$  again, as the dimension of the *rate at which increase in rate of supply increases rate of enjoyment*.

And it is, in truth, sufficiently plain that this *rate* is a direct relation between the quantity of the commodity and the enjoyment it causes, and is not affected in its numerical expression by any change in the unit of time.

These results are summarized on Figs. IV.-VII.: in Fig. IV. we have dimension of abscissa  $Q$ , and

dimension of ordinate  $U$ ; in Fig. V. of abscissa  $Q$ , of ordinate  $UQ^{-1}$ , of area  $U$ ; in Fig. VI. of abscissa  $QT^{-1}$ ,

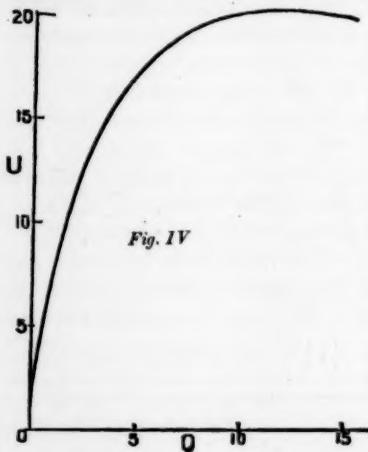


Fig. IV

of ordinate  $UT^{-1}$ ; in Fig. VII. of abscissa  $QT^{-1}$ , of ordinate  $UQ^{-1}$ , of area  $UT^{-1}$ ; where the areas in Figs. V. and VII. have the same dimensions, respectively, as the ordinates in Figs. IV. and VI.

If we wished to represent, with the aid of Fig. VII., the total advantage derived from the consumption of a given quantity of commodity at the rate indicated, we should have to add a third axis perpendicular to the plane of the figure, on which to measure the time during which the rate of enjoyment represented by the area is maintained. Neither of Jevons's objections to this method are valid. There is no reason why an economic quantity of one or of two dimensions should not be represented by a figure of three dimensions; and there is no objection to introducing time positively on one axis and negatively on another.

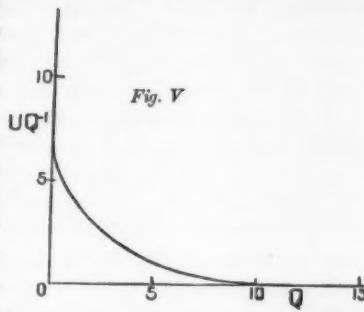


Fig. V

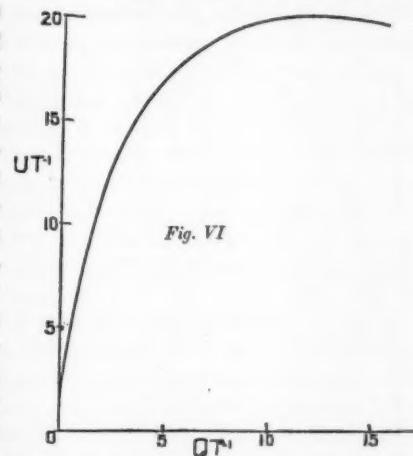


Fig. VI

It should be observed that this method renders a perfect account of the fact that (under ordinary circumstances, and with due limitations) we must hold that the

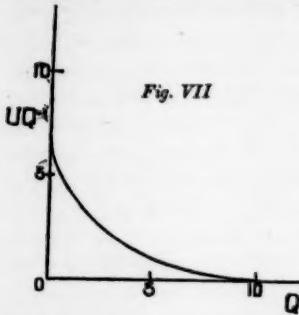
same amount of commodity yields a larger sum of satisfaction when consumed slowly than when consumed fast. The result of slackening the rate of supply would be to shorten the abscissas in Figs. VI. and VII., and proportionately to

lengthen the perpendicular time-axis in the solid figure built on Fig. VII. This would obviously increase the volume of the solid that represents the total utility.

Such a figure would represent all the quantities with which we have to deal. Rate of supply on the axis of  $X$ , dimensions  $QT^{-1}$ ; final degree of utility on axis of  $Y$ , dimensions  $UQ^{-1}$ ; time on perpendicular axis of  $Z$ , dimension  $T$ ; rate of enjoyment on area of plane figure, dimensions  $QT^{-1}UQ^{-1}$ , or  $UT^{-1}$ ; total enjoyment on volume of solid figure, dimensions  $QT^{-1}UQ^{-1}T$ , or  $U$ ; total supply on rectangle between axis of  $X$  and axis of  $Z$ , dimensions  $QT^{-1}T$ , or  $Q$ .

Of these quantities, the rate of supply and the final degree of utility are the most important, and these are the most easily read on the figure.

We have now considered the case of absolute quantity of commodity yielding absolute quantity of enjoyment, and also the case of rate of supply of commodity yielding rate of enjoyment; but there is a third and equally important case, in which absolute quantity of commodity yields rate of enjoyment. Thus we are accustomed to think



of furnished apartments as yielding so much advantage per week, month, or year, not as yielding a certain total advantage. The correctness, or at any rate the completeness, of this view may well be questioned, but in the case of imperishable articles, such as diamonds, it is difficult to regard the variable and function in any other light than that of absolute quantity and rate of advantage.

In the first place, then, we shall measure quantity of commodity, as the variable, along the axis of  $X$ , with dimension  $Q$ , and rate of enjoyment, as the function along the axis of  $Y$ , with dimensions  $UT^{-1}$ . Differentiating, we shall get the rate at which increments of commodity are increasing the rate of enjoyment, as a function of  $q$  with dimensions  $UT^{-1}Q^{-1}$ . This is not final degree of utility (dimensions  $UQ^{-1}$ ), but a ratio between this quantity and time; and it is the measure, not of *value* and thence of *price*, but of *value-per-unit-of-time* and thence of *hire*.\*

Obviously the problem of interest, or hire of capital, must fall under this general case. Capital is a commodity and is measured in absolute units, whereas the advantage of capital is a periodic yield and is measured by a ratio between time and commodity. The peculiarity of the case is that here the advantage itself consists in the obtaining of commodity, so that the dimension  $U$  will itself be  $Q$ . Thus in the case of capital the dimensions of hire  $UT^{-1}Q^{-1}$  become  $QT^{-1}Q^{-1}$ , or  $T^{-1}$ . This must be the dimension of hire of capital (that is to say, of interest) considered as a rate; and we shall see presently that an independent investigation of the phenomena of interest leads to the same conclusion.

\*Both price and hire to be understood as *per unit of commodity*. To establish a relation between hire and price, we must suppose the purchaser's estimate of distant enjoyment to be affected by uncertainty, or some other quality inherent in remoteness, in such a way as to make the successive anticipated yields of successive increments of time a convergent series. Price will then be the integral of  $dt$ . (hire), and will have the dimensions of hire and time; viz.,  $UT^{-1}Q^{-1}T$ , or  $UQ^{-1}$ , as before.

Jevons's objection to representing identical or similar quantities now by one and now by another kind of geometric quantity, and to introducing the same economic dimension upon two axes, leads him to criticise with quite needless severity, as I take it, Peacock's observations on the subject of interest (*Theory*, pp. 271 *sq.*), and further to undervalue his own diagrammatic representation of the phenomena in question, and to obscure his own results.

The problem may be attacked thus: Suppose an industrial concern *in which a fixed amount of labor is employed* to command  $c$  units of capital,  $c$  being variable. Obviously we may treat the capital as commodity, with the single dimension  $Q$ . Now consider the rate per unit of time at which that capital will wear out and disappear. We must suppose the stock always to be replaced as fast as it disappears, and may take  $\tau$  units of time (say years) as the period during which the whole will have been renewed. Measuring the annual wear not in percentage, but in absolute units of capital, we shall then have the annual wear equal to  $\frac{c}{\tau}$  and its dimensions will be  $QT^{-1}$ . This quantity is a function of  $c$ . Probably  $\tau$  itself will vary according to the amount of  $c$ ; that is to say, the number of units in  $\tau$  will be a function of the number of units in  $c$ ; for we may suppose that for early increments of capital the annual wear will increase less than proportionately to the increase of the capital, but when the amount of capital becomes very large it will be difficult, with the fixed amount of labor at command, to look after it properly, and it will wear more rapidly. We may, however, neglect this consideration and assume that  $\tau$  will be a constant, and  $y = \frac{c}{\tau}$ , the equation of a straight line. In Fig. VIII., then, the abscissas of points on the line  $OW$  might represent the quantity of capital, and the ordinates the amount of annual

or other periodic wear, as a function of  $c$ . We have next to examine the productiveness of the capital; i.e., the number of units of commodity, per annum or other unit

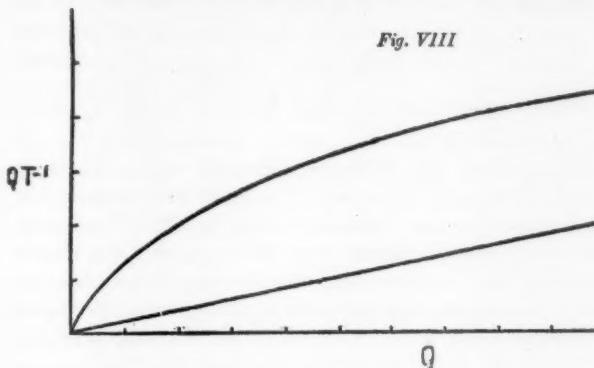


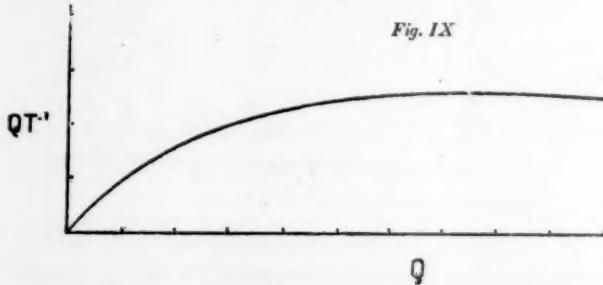
Fig. VIII

of time, which the use of the capital enables the fixed application of labor to produce. In estimating this we must subtract all the commodity which the capital actually consumes, such as coal, oil, etc. (supposing the capital to be in the shape of machinery).\* We may take  $p$  as the amount of commodity which  $c$  enables the fixed application of labor to produce (over and above what  $c$  itself consumes) every year, or other period of time. Its dimensions will be  $QT^{-1}$ . Then  $p\tau$  will be total amount of commodity produced in the time  $\tau$  in virtue of the use of  $c$ . And if we put  $q$  for  $p\tau$  then the *annual* product, or  $p$ , may be written  $\frac{q}{\tau}$ . Its dimensions will be the same as those of  $\frac{c}{\tau}$ ; viz.,  $QT^{-1}$ .

As the capital increases in amount, its annual yield,  $\frac{q}{\tau}$ , will at first increase rapidly, but after a time (the application of labor being fixed) increase in the amount of capital

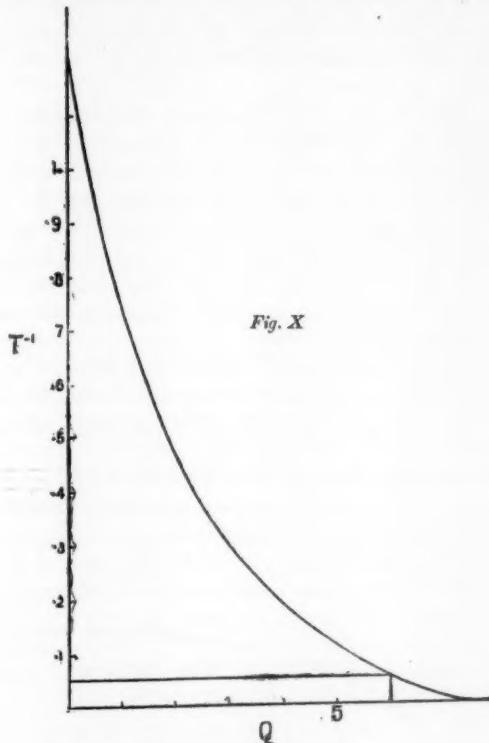
\* I assume the existence of a common measure of all "commodities."

will but slightly increase the annual yield (since the labor is already supplied with its most urgently required aids), and at last, when the point has been reached at which the labor has all possible aids and is applied at the greatest possible advantage, further increments of capital will not increase the annual product at all. This quantity,  $\frac{q}{r}$ , having the same dimensions as  $\frac{c}{r}$ , may be shown on the ordinates of the same figure. It is given, hypothetically, on the upper curve of Fig. VIII., as a function of  $c$ . This *gross* productiveness of  $c$ , as we have seen, reaches a maximum, or at any rate has a limit; but long before it reaches it, the *net* productiveness of  $c$  will have passed its maximum and will be tending to zero; for we must remember that as  $c$  increases, the annual waste of  $c$  also increases without limit, and since this annual waste must be made good, the *net* productiveness of  $c$  is represented by  $\frac{q}{r} - \frac{c}{r}$  (i.e., annual yield of capital minus annual waste of capital) in the figure the length of the intercept between the two curves. Now this quantity,  $\frac{q-c}{r}$ , is itself a function of  $c$ , and has the dimensions  $QT^{-1}$ . It is represented in Fig. IX.



If we now proceed to differentiate, to the variable  $c$ , we are in danger of having to deal with ordinates so small

as to defeat the object of diagrammatic illustration; but this may be averted by the familiar artifice of lengthening the scale on the axis of  $Y$ . We will therefore represent the unit of  $Q$  by the same length as before on the axis



of  $X$ , and by a length ten times as great on the axis of  $Y$ . We shall then have a curve such as that of Fig. X., which will show us the rate at which increments of capital are increasing the annual return made by the capital.

Now we have seen that the rate of hire of anything follows the ordinary laws of final degree of utility, and is determined by the rate of productiveness (in satisfaction or commodity) of the *last increment* of the thing hired. That is to say, if  $c$  is the quantity of capital and  $f(c)$ , in Fig. IX., the net periodical productiveness of  $c$ , then  $f'(c)$ , in Fig. X., will be the *rate of hire* of capital; i.e., the *rate of interest*.

This quantity is a ratio between rate-of-supply-of-commodity (yield) and commodity (capital), and its dimensions therefore are  $QT^{-1}Q^{-1}$ , or  $T^{-1}$ ; and Jevons has shown, with great care and elaborateness, that  $T^{-1}$  is in truth the dimension of rate of interest (*Theory*, etc., pp. 268 *sq.*). In fact, the length of any ordinate in Fig. X. shows, in numerical units, without dimension, the *ratio* between the increase of the capital and the increase of the periodical yield or product. For  $x = 5\frac{1}{2}$  it is one-tenth, or ten per cent; for  $x = 6\frac{1}{4}$  it is one-twentieth, or five per cent. All that we need to know more is the *length of the period*, for which the periodic yield has been estimated. That is to say, the only dimension of rate of productiveness, or rate of interest, is  $T^{-1}$ . The numerical expression of a given rate of interest is only affected by a change in the unit of time, not by a change in the unit of commodity.

Proceeding, then, with the examination of Fig. X., we find that  $f'(c) \cdot c$  is the actual sum periodically paid as interest;  $\int_0^c f'(c) \cdot dc$ , or the total curvilinear area over  $c$ , the total net periodical yield of the given application of labor, backed by the quantity  $c$  of capital, and

$$\int_0^c f'(c) \cdot dc - f'(c) \cdot c,$$

or the curvilinear area over the rectangle of interest, the periodical return to the application of labor over and above the sum paid in interest. All these quantities have the dimensions  $QT^{-1}$ , and are periodical. To get

the absolute sum of any one of them during a defined period  $\tau$ , we should have to multiply by  $\tau$  and reduce the dimensions to  $QT^{-1}T$ , or  $Q$ . This would involve a third axis, registering positively the dimension  $T$ , which appears negatively on the axis of  $Y$ . What are the grounds of Jevons's objection to this I have not been able to discover, and I am wholly unable to defend his position (*cf. Theory*, pp. 72 *sq.*).

If the view now set forth is correct, no great importance can be attached to the paragraph on pp. 266, 267 of the *Theory*, in which Jevons seeks a "general expression for the rate of interest." His fundamental hypothesis that the produce for the same amount of labor may reasonably be regarded as a continuous function of the time elapsing between the expenditure of the labor and the enjoyment of the result is not based upon a typical case of the use of capital, and in the cases to which it does apply it deals with derivative, not with primary facts and phenomena. The typical case of the use of capital is that in which the result is yielded continuously. All the great staple industries need a continuous renewal and expansion of capital, which capital, as it is invested, forthwith begins to yield a continuous product. This I take to be the primary and norm-giving fact. If, by way of exception, an investment of capital is proposed which will, after an interval, yield not a revenue, but an absolute utility; or if, as is extremely common, a gradual investment of capital is proposed, with the expectation that when the investment is complete the whole invested capital (in the shape of a ship or a machine, for instance) will be purchased by some one who has performed the process of integration indicated in the note on p. 18; or, lastly, if an immediate investment of capital is proposed in order that after an interval a periodic yield may be enjoyed by the investor,—in all these cases the investor has to consider what quantity of commodity he would command at

the expiration of the given time, had he invested at first in one of the staple industries, and then continuously reinvested his continuously accruing return in the same industry again. If the proposed investment does not promise equal advantages, he will not enter upon it. Thus the basis of the estimate in every case of *deferred result* must be sought in the rate of *immediate yield* (*cf. Theory*, pp. 66-74, 90-91, 266-280).

In these notes I have made no attempt to carry the theory of capital and interest beyond the point at which Jevons left it. Very much remains to be done in this field, but my present object is only to clear away certain difficulties and rearrange the results already obtained, in order that the ground from which we are to advance may be better and more firmly occupied.

As an exercise we might trace the effect of any process which would make capital more durable. This would increase  $\tau$ , and so lower the curve of wear in Fig. VIII. But it probably would not lower the curve of productivity, since it would increase the numerator as well as the denominator of the formula that gives the ordinate, and that, too, in something like the same proportion. Hence the ordinates of Fig. IX. will be lengthened, and so will those of Fig. X. The immediate effect, therefore, if we could imagine the phenomenon taking place suddenly and simultaneously everywhere, would be to raise the rate of interest. But the increased net production would tend to increase accumulation, and so  $c$  would increase, and  $f(c)$  and  $f'(c)$  would decline again.

PHILIP H. WICKSTEED.

## CO-OPERATIVE SAVINGS AND LOAN ASSOCIATIONS.

THE class of associations discussed in this article are known by many names. Among them are Co-operative Savings and Loan Associations, Co-operative Banks, Building Associations, Building and Loan Associations, Mutual Loan Associations, Homestead Aid Associations, and others. There is no name which so accurately describes them all as Co-operative Savings and Loan Associations, and no form of direct co-operation among the wage-earners of the United States is attracting more attention at the present time than the various associations grouped under this name. Such attention is not confined to those directly interested in organizing and conducting them, or to wage-earners, but is shared by social science associations and by many philanthropic men, who are deeply interested in every movement which seems to present safe and practical methods for improving the material welfare of the wage-earning classes.

While an examination of these associations throughout the country reveals many and important variations in the manner of conducting their business, the general plan of their organization and business methods is quite uniform, and may be briefly described as follows:—

1. They are corporations organized under a general act of the State authorizing their formation.
2. Every member of an association is a stockholder, and becomes such by subscribing for one or more shares of stock, signing the articles of association and by-laws, and paying an entrance-fee. He has thereby undertaken to pay to the association, upon each share of stock taken by him, at regular stated times, a certain sum called "dues,"

and to continue the payment of such dues, if he continues to hold the shares of stock, until the sum of the dues so paid, increased by dividends added thereto from the profits of the association, reaches a certain amount specified in the articles of association as the "matured" value of the shares of stock. When the matured value is reached, he surrenders his stock, and the association pays him the accumulated savings. For the purpose of preventing a few stockholders obtaining control, the number of shares which a shareholder may hold is limited.

3. The capital of the association consists of the accumulated savings of the stockholders, paid to it in the form of dues upon its stock, and the profits of the business of the association which have been distributed from time to time in the form of dividends and added to the value of the shares.

4. The association loans its money only to its own stockholders, and no stockholder can borrow a larger amount than the matured value of the shares of stock owned by him. The security required is (1) a pledge of the shares of stock upon which the borrower makes the loan, (2) a bond or note secured by a mortgage upon unencumbered real estate, or (3) a pledge of shares of stock of the association which exceed in value the amount of the loan.

5. Every stockholder who has the required security to offer the association is equally entitled with every other stockholder to borrow its funds, to the extent of the matured value of the shares held by him. For the purpose of loaning the funds of the association, stated meetings are held, open to all stockholders, at which the funds are offered to borrowers. When two or more stockholders wish to borrow the same funds, the right to a loan is determined by an open bidding of a sum to be paid for the loan in excess of the interest required; and the loan is awarded to the highest bidder. The sum thus agreed to

be paid by the borrower in excess of interest is called a "premium." The borrower pays interest on his loan at stated times corresponding with the same times that he pays dues on his stock.

6. Shares of stock upon which the holder has made a loan are called "borrowed" or "pledged" shares, while shares not borrowed upon are called "free" or "unpledged" shares.

The holder of free shares may surrender them to the association at any time upon thirty days' notice and withdraw his accumulations of savings, the association retaining a certain percentage of the profits, which have been added to their value in dividends; or he may sell them to another person, and such person, upon signing the articles of association and by-laws and procuring a transfer of the stock to himself upon the books of the association and paying a certain transfer-fee, becomes a shareholder in his stead.

The sum which the association pays upon each share withdrawn is called its "withdrawal" value.

7. The borrowing shareholder continues to pay dues upon the stock borrowed upon with his interest until the shares reach their matured value, when they cancel his loan, and he surrenders the stock, and the association discharges his securities.

He may, however, repay his loan at any time, and again hold his shares free; or he may have their withdrawal value applied upon the loan, and pay the balance and surrender his stock. A fine is imposed in all cases when a default is made in the payment of interest or dues.

8. The profits of the association are derived from interest and premium on loans, from the share of profits left by withdrawing shareholders, from fines, entrance and transfer fees. These are distributed annually or oftener, after expenses are deducted, in dividends added to the value of the shares of stock, each share of unmatured

stock receiving a dividend in amount bearing the same proportion to the total sum distributed that the value of the share bears to the total value of all the shares to which the distribution is made.

The important differences among associations in the manner of conducting their business are as follows:—

1. In the manner of issuing their stock. Some issue only one series. A person taking stock in this class of associations after the time of the first issue is required at the time he takes his shares to pay a sum equivalent to the sum of the accrued dues and the profits which have been added to the stock prior to his becoming a shareholder, so that every share of stock outstanding, and not in arrears for dues, at any time in the history of the association is of the same value. When the shares reach their matured value, every shareholder has become a borrower to the extent of the matured value of his shares. The value of his stock cancels his loan, and the association dissolves. This is called the *terminating* plan. This was the plan usually followed until recent years. Another plan, which is the one quite generally adopted at the present time, is to issue a new series of stock yearly or oftener. This is called the *serial* plan, and under it the association may become perpetual. There is still another plan called the *permanent*, in which stock is issued at any time.

2. The second important variation relates to the matured value of shares, the amount and time of paying dues, and the manner of payment. The matured value of shares ranges all the way from \$10 to \$500. The most common amounts are \$100 and \$200. Dues are paid weekly or monthly, and vary in amount from ten cents weekly to two dollars monthly on each share. The most common amounts are twenty-five cents weekly and one dollar monthly. Payments are usually required weekly or monthly. One class of associations require all dues

and interest to be paid to a committee of the Board of Directors at the stated meetings, while another class allow them to be paid to the secretary at his office before the stated weekly or monthly meetings.

3. The third important variation is in the modes in which the borrower bids and pays a premium.

(a) One mode is for the borrower to bid a certain sum per share, the amount being deducted from the loan, and the security being given for the full matured value of the shares borrowed upon, with interest; but, in the event the borrower pays the loan before the shares borrowed upon shall mature, certain rebates upon the premium so bid and paid are allowed to him. This is known as the "gross plan."

(b) A second mode is for the borrower to bid a certain sum per share, as in the gross plan, and to receive a rebate on the premium paid in the same manner in case of pre-payment of loan; but he only pays interest on the net sum received after deducting the premium. This is called the "net plan." Very few associations pursue this plan at the present time.

(c) A third mode is for the borrower to bid a certain sum per share, which he will pay monthly or weekly, as the scheme of the association requires, in addition to interest. This is known as the "instalment plan."

(d) A fourth mode is for the borrower to bid on the rate of interest he will pay for the loan. This is named the "interest premium plan."

(e) A fifth mode is for the borrower to bid a certain sum per share in the event of competition among borrowers, the amount being deducted from the sum loaned and security being given for the full amount, as in the gross plan; but no rebates are allowed on prepayment of the loan. The premium bid and paid is treated as a bonus, and the whole matter of premium on the loan is ended when the loan is perfected. This has been named

the "New York premium plan," by reason of its incorporation in an act passed in that State in 1887. It is, in fact, the gross plan without the system of rebates, whereby certain parts of the premium bid by the borrower are returned to him in the event of his paying his loan before the maturity of the shares borrowed upon.

There are other minor variations, but it is unnecessary to describe them for the purposes of this article.

The first association in this country was organized in a suburb of Philadelphia in January, 1831, and named the "Oxford Provident Building Association." It was formed upon the terminating plan, matured value of shares \$500 and monthly dues \$3. Its stock matured in June, 1841, and the association closed. Another association was immediately formed under the same name. A second association was formed in 1845, and called the "Franklin Building Association." It placed the matured value of its shares at \$200, and monthly dues \$1. This was the model after which associations thereafter in Philadelphia were largely patterned. The first general act authorizing their incorporation in Pennsylvania was passed in April, 1850, and limited the number of shares of stock to 500. In April, 1851, this limit was increased to 2,500. The matured value of shares was placed at \$200, and monthly dues at \$1. The limitation in the number of shares remained in the laws of Pennsylvania until 1874.

It is estimated that about fifty associations were formed in Philadelphia from 1845 to 1850; but they were unincorporated, conducting their business through trustees, except that in a few associations special acts of incorporation were obtained from the legislature. Their numbers increased during the decade of the fifties, and they spread to some extent throughout the State. The Civil War retarded their growth for a time; but after its close their number in the whole State began to increase with great

rapidity, and their prosperity has continued until the present time. The increase in numbers was greatest from 1870 to 1880, and the total number of associations in the early years of the present decade was undoubtedly greater than at the present time. It was variously estimated from 1,500 to 1,800. The decrease in numbers in recent years is owing to two causes.

1. Prior to 1874, all the associations formed were limited to 2,500 shares, whether formed upon the terminating or serial plan. This necessarily limited the membership of a single association within comparatively narrow boundaries. In 1874, the law was changed by striking out the limit as to the number of shares, and providing that the aggregate capital of an association should not exceed one million dollars. This permitted a single association to transact an amount of business that required several before the amendment of the law. The result has been an increase in the membership of single associations.

2. Many of the associations, still in existence in 1880, were formed upon the terminating plan, and have matured their stock and dissolved. The Secretary of Internal Affairs of Pennsylvania, in his report for 1879-80, in speaking of these associations, said:—

Hundreds of these associations have been conducted, from their inception to their termination, without the loss of a dollar. From their inception up to the present time, it is estimated that under their operation 60,000 comfortable houses have been erected in Philadelphia alone, and that they have enabled 25,000 householders to pay off mortgages that probably would otherwise have been foreclosed. They have been the means of making 80,000 owners of real estate and 80,000 tax-payers, thus giving Philadelphia the pre-eminent title of being the "city of homes."

M. J. Brown, publisher of the *Building Association and Home Journal* of Philadelphia, than whom there is no one better qualified to judge, estimates the present number in the State at 900, of which one-half are located in Philadel-

phia. For the purpose of determining the amount of capital invested in these associations in Philadelphia and throughout the State, he made an examination of the accounts of one hundred and twenty associations, and found their aggregate capital to be \$8,749,337; average capital, \$72,911; aggregate shares, 151,680; average shares, 1,264. Applying this ratio to the four hundred and fifty Philadelphia associations, their aggregate capital amounts to \$82,810,017, and in the whole State to over \$65,000,000. Applying the average of the number of shares in each of the one hundred and twenty associations examined to the nine hundred in the State, the total number of shares amounts to 1,400,000. Upon each of these shares there is paid in dues every year \$12, making the total savings paid into these associations in the State of Pennsylvania, in a single year, \$17,251,200.

We have dwelt upon the details of these associations in Philadelphia at some length, for the reason that here was their beginning in this country, and here they have achieved their greatest success. Why they have been so successful we will explain after noting briefly their history in other States.

Their early history in New York is worthy of study. Some voluntary associations were formed during 1849-50, but the first general act for their incorporation was passed in 1851. This act was general in its provisions, and outlined no definite plan for conducting their business. Under its authority, seventy-two associations were incorporated in the city of New York between May 26, 1851, and November 26, 1852. During this time, commercial activity and speculation were at high tide. The organizers explained to the ignorant and unwary promising schemes whereby homes were to be paid for in an easy manner. Infatuated with the speculative rage of the times, the enthusiastic borrower expected his real estate to double or treble in value while he was paying for it;

and under this stimulus he was in a mood to bid a high premium, that he might borrow the funds of the association. The tide in commercial affairs soon changed, hard times followed, the dues and large interest could not be met, fines accumulated, and the borrowers found themselves in a net from which they could not escape. Murmurs of discontent, the menace of impending disaster, and charges of deception and fraud supplanted confidence, hope, and expectation; and the legislature was importuned for relief. In the winter of 1855, it appointed a committee of investigation to report in 1856. The committee made a full investigation, and reported in January, 1856, in favor of the repeal of the act of 1851, authorizing their incorporation.\* The recommendations of the committee were not adopted; but building associations in New York City soon died out, not to reappear until 1885. Since that time there has been a rapid revival of interest and increase in numbers, until at the present time there are over sixty associations in New York, Kings, and Westchester Counties. The present movement has been attended with some of the characteristics of 1851-52; but the associations are adopting better methods, and there is a growing tendency to place them upon secure foundations.

While the craze was proceeding in New York City in 1851-52, some associations were organized in other parts of the State with much the same outcome. At the present time, the greatest success in the State of New York has been attained in the cities of Buffalo and Rochester. The first association in Buffalo was formed in 1851, the second in 1860, the third in 1869, and during that year eighteen were organized. Since that time, they have been gradually increasing. The total number organized in that city prior to November 22, 1888, was three hundred and twenty-seven. The greater part of these have

\* See vol. iii. *Assembly Documents* for 1856, No 46.

ceased, from the maturing of their stock or by uniting with other associations, so that the number now in active operation is estimated at one hundred. Their early experience in Rochester was unsatisfactory; but their revival there commenced in the latter part of the seventy decade, and since 1882 they have increased with astonishing rapidity for a city of its size, and they now number over eighty-five. Throughout the whole State, at the present time, there are nearly three hundred associations. A State league has been formed; and there is an increasing amount of intelligent discussion as to the best methods of conducting their business to secure safety and a steady increase of the amount of savings which they annually accumulate. One of the best acts authorizing their incorporation to be found in any State of the Union was passed by the legislature of New York in 1887, and is known as "Chapter 556." This act gives them the name of "Co-operative Savings and Loan Associations," and outlines a definite plan for conducting their business; but the act of 1851 still remains unrepealed, and new associations may be incorporated under either act.

Their early history in Connecticut was unsatisfactory, and resulted in an investigation by the legislature and a repeal of the law authorizing their formation, which closed their existence in the State until recently.

In Massachusetts, their early endeavors did not meet the expectations of those connected with them. The first was organized in Boston, in 1852. In 1859 there were at least fifty-nine in the State; but in 1866 reports by State officers reveal only three in existence. Their revival began about 1877. Hon. Josiah Quincy became interested in this form of co-operation, and believed these associations could be utilized to great advantage as a "savings institution," if organized upon sound principles and conducted by safe and equitable methods. Under his guidance, an act was prepared by a Philadelphia ex-

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pert, to authorize their incorporation, and outlining a definite plan for conducting their business. This act was passed in 1877. By this act, they were called "Co-operative Saving Fund and Loan Associations." In 1883, the legislature amended the act by changing the name to "Co-operative Banks." No association of this kind can do business in the State unless incorporated under this law. This necessitates substantial uniformity in their operations. The matured value of shares is \$200, issued in quarter, semi-yearly, or yearly series, the monthly dues being \$1. In the act of 1877, the instalment plan of premiums was adopted; but since then the act has been amended, allowing each bank to decide for itself whether it will adopt that plan or the interest premium plan. "The Pioneer" of Boston was the first association organized under the act, July 26, 1877. From that time to this, these associations have from year to year been increasingly prosperous and successful. They are under the supervision of the Commissioners of Savings Banks. From the report of that Board for 1888, we learn that on the first day of November last there were in the State sixty-six co-operative banks, located in forty-seven cities and villages, having in force 184,598 shares, distributed among 27,943 shareholders. The total accumulated savings amounted to \$5,505,112, showing an increase over 1887 of \$1,298,163. While the number of shares in force has steadily increased from year to year, if it be assumed that they will remain at the above figure of 184,598 during the present year, there will be paid into these banks, savings, in the form of dues, in 1889, amounting to over \$2,200,000. Massachusetts, in the wisdom of its legislation relating to these associations, outranks any other State in the Union.

The proper limits of this article will not allow us to enter into the history of the success or failure of these associations in other States, except in a very general way.

At the present time, they are successful and rapidly increasing in New Jersey, numbering about two hundred and forty, with accumulated savings of over \$10,000,000.

The first association in Maryland was formed in Baltimore in 1846. They have been quite uniformly successful in this State. The most common matured value of shares has been \$100 and weekly dues of twenty-five cents. The total number of associations in this State in October, 1888, was one hundred and ninety-one, of which one hundred and fifty-eight were located in Baltimore.

In the number of associations, Ohio ranks next to Pennsylvania. The first was formed in Cincinnati in July, 1868, under the guidance of Dr. P. A. Keck. A *Manual for Building and Loan Associations*, published by S. Rosenthal & Co. of Cincinnati in August last, places the number in Hamilton County at four hundred, of which three hundred and twenty-five are located in Cincinnati. There are probably three hundred in the rest of the State. Dues in this State are usually placed at twenty-five cents a week. The number of shareholders in Cincinnati alone is estimated at seventy-five thousand. There is at Dayton one of the largest associations in the United States, but its business methods are in some respects quite unlike the true Building and Loan Association. It is called the "Mutual Home and Savings Association." It issues shares of the matured values of \$100 and \$500, and permits a share to be paid for in one payment, and thereafter to receive semi-annual cash dividends. From its fifteenth annual report, dated December 31, 1887, we learn that it had 5,835 shareholders and \$1,154,148 of assets.

The first association in Illinois was formed in Chicago, under the name of "The Chicago Building Association," in 1849, the second at Jerseyville in 1852, and the third at Chicago in 1857. No general act for their incorporation was passed until 1869. In 1872, this law was super-

sed by an act patterned after the laws of Pennsylvania. This was repealed in 1874 and re-enacted in 1879. In 1880, the associations became involved in a litigation touching the constitutionality of the law permitting them to receive premiums on loans in excess of legal interest. The decisions were adverse to them at first; but they finally succeeded, this contest calling into existence "The Illinois Building and Loan Association League." From the various tribulations through which they passed, they have at last emerged into great strength and popularity; and their growth during the last three years has been marvellous. Many estimates at the present time place over three hundred associations in Chicago and over two hundred in the remainder of the State.

The number in Wisconsin in November, 1888, was forty-two, of which twenty were located in Milwaukee. The first was formed at Appleton in October, 1883. They are rapidly increasing in numbers and popularity.

The early experience of the associations in Michigan was not such as to inspire confidence, and in 1877 a law was enacted somewhat restrictive in its provisions; but in 1887 an act was passed more liberal in its terms. Since then there has been a great revival of interest, and at the present time there are about forty-five associations in the State.

In Minnesota, building and loan associations have attained their greatest growth in the twin cities of Minneapolis and St. Paul, the first being organized in 1869. They are patterned after the Philadelphia plan, and have been successful from the first. It is estimated that from eight thousand to ten thousand homes have been secured through their agency, and their total number in the State is estimated to be over one hundred.

Their growth has been rapid in the last three years in Indiana, and especially in Indianapolis, where it is stated there are over one hundred associations. They are also

increasing rapidly in Iowa, Kansas, and Missouri; but of their number in those States we cannot speak with accuracy. They have assumed sufficient importance in California to call into existence a State league, and they are also beginning to appear in every Territory.

The Southern States are awakening to the importance and advantages of this form of co-operation. There are many flourishing associations in New Orleans, the oldest of which dates from 1882. Texas is reported to have fifty, which probably exceeds the number in any former slave-holding State except Maryland and Missouri; but they are found in every State in greater or less numbers.

The total number of associations in the United States cannot be stated with entire accuracy, but it will not vary much from 4,000. There is greater uncertainty in estimating the total amount of their present accumulated savings or the amount received by them annually; yet we have sufficient data from which to make an approximate estimate. From a careful analysis of such data, we estimate the accumulations now held by them to be at least \$800,000,000, and that the amount which will be paid to them in the form of dues alone in 1889 will exceed \$65,000,000.

At the close of our brief history of their success in Pennsylvania, we promised, after referring to them in other States, to answer the question, Why has their success in that State been greater than elsewhere? We believe the answer is to be found in the laws of the State which controlled their formation from 1859 to 1874. We have before stated that the first general act authorizing their incorporation was passed in April, 1859, and that this act limited the number of shares which a single association could issue to five hundred. At an average of ten shares to a shareholder, this would limit the total membership to fifty, or one hundred with an average of five shares to each stockholder. They were often called in these

early days in Philadelphia "Building Clubs." In 1851, as we have already noted, the limit of shares was increased to 2,500, and so remained until 1874. This limitation of necessity kept the associations comparatively small in the number of their several memberships. No well-paid official places were at their disposal. There was no chance to organize large associations for the purpose of securing to the organizers and officers lucrative positions in the management of the business. There was no opportunity for speculative organizations to come into existence under the name and guise of "Building and Loan Associations"; and, by reason of this limitation, they have retained the characteristics essential for continued success, and have escaped many of the dangers which in many other localities finally brought disaster to the early attempts in this form of co-operative endeavor.

There are some places in the country at the present time where schemes under the name of "Building and Loan Associations" are assuming great importance, which will prove in the end, we fear, unsatisfactory, if not disastrous, and unjustly cast odium upon the true Co-operative Savings and Loan Association. This is especially the case in the North-west. The popularity of some of the methods upon which the business of the true Building and Loan Association is conducted is being taken advantage of to build up immense corporations, bearing the name of "Building and Loan Associations," which are not content even to confine their operations to the State wherein they are incorporated, but push into other States, and aspire to become national in the extent of their business.

As a sample of this class of corporations, we quote the following from an article in the Minneapolis *Tribune*, issued February 9, 1888, relating to one of them. We omit the name:—

This association was organized a little less than two years ago, and has been successful beyond the expectation of even its friends.

To accommodate its rapidly growing business, new offices were needed; and the entire second floor of the National Bank of Commerce building is now used for this association alone. Some idea of the magnitude of the business can be obtained from the number of persons in the employ of this association. There are now in the home office twenty-five clerks. Ten special travelling appraisers are constantly on the road, inspecting loans. In addition to this, there are about one hundred and fifty travelling solicitors engaged in selling stock. Already stock of this association to the amount of \$16,000,000 has been sold, the membership now being more than twice as large as that of any other association in the United States. There are among the members of this association nearly one thousand bankers, and more than two-thirds of the remaining membership is composed of merchants and business men.

A corporation of this character is no more entitled to the name of "Building and Loan Association" than a "Western Loan and Trust Company." Did these "one thousand bankers" take stock for the purpose of accumulating savings? An examination of the facts would reveal that they paid for their stock at a single payment, and are to receive semi-annual cash dividends, and are expecting it will be a very remunerative investment. If the inquiry is pushed to the extent of asking from what source the profits of the company are to be derived, we shall find the answer to be that borrowing stockholders in the association are to pay premiums \* upon their loans in excess of legal interest. These "one hundred and fifty travelling solicitors" will "rope in" the ignorant and unwary borrowing stockholders by describing the merits of the genuine Co-operative Savings and Loan Association scheme, and by representing that, while they seem to be paying a large premium in excess of legal interest weekly or monthly, they will get it back in the dividends added

\* Since writing the above, a circular of this association has come into our possession, from which we quote as follows: "Premiums bid are now running about \$50 per share [shares are \$100]. At this rate, two shares of stock are required to be held for each \$100 loaned. The cost of a loan at this premium, with interest added, is \$1.70 per month for each \$100."

to their stock, and that in the end their loans will not cost them more than legal interest, and possibly even less. The borrower sooner or later will find that he has been deceived, that he is in a net from which he cannot extricate himself without severe loss. All sorts of charges upon the management will begin to be made; and influences akin to those which sought relief in the legislative halls at Albany from New York City in 1855-56 will bring the association and its schemes into disgrace, and cast odium not alone upon the false, but also upon the equitable and uniformly successful methods of co-operative savings and loan associations.

These criticisms are not aimed at the association above referred to especially, but at the whole class of associations which are endeavoring to be classed as building and loan associations, but are, in fact, corporations formed and conducted for purposes wholly different from the objects of the class of associations whose name they assume. The friends of the latter in Minnesota are already aroused to the danger with which these falsely named corporations menace their future, and at the present time legislation is pending to bring them under State supervision and control.

Any co-operative building and loan association should be confined in its operations at least to the county in which it is located, and, when located in a city, to the city itself and the territory immediately adjacent, in making loans upon real estate. It loses its distinctive characteristics and strong elements of safety whenever its operations become enlarged and extended over a wide field. It ceases to belong to the category of co-operative savings and building-loan associations, and is no longer a co-operative society of the vicinage, in which all may become interested, have a voice in its management, and full knowledge from month to month of all its transactions.

The economic benefits resulting to society from this form of co-operation, when properly conducted, can hardly be overestimated.

1. As an "institution for savings," no scheme has yet been devised and put into operation which combines safety of the funds, cheapness in management, and good rates of interest in so great degree as the Co-operative Savings and Loan Association.

There is never a large sum of money in the hands of its treasurer or other officer for him to steal, if so inclined. Any possible loss from such a cause can be amply covered by his bonds, unless there is great carelessness; and, if that occurs, and the treasurer becomes a defaulter, it can be only for a small sum compared with the accumulated capital. The loss, when distributed among all who have to bear it, will be but a small percentage.

The moneys received at the stated meetings are soon thereafter loaned to borrowers or paid to withdrawing stockholders. Only first mortgage upon real estate or a pledge of the stock of the association exceeding in value the amount of the loan is taken as security. In case of loan upon stock, the security is perfect. In the mortgage loan, the real estate is located in the vicinity, and there is no difficulty in ascertaining its value. The committee having the investment in charge are financially interested in the safety of the security taken. They receive no fees or percentage in case they accept an offered security, which they would lose by rejecting it. All the ordinary motives that affect men's judgment under such circumstances conspire to influence them to accept only a safe security. Another most important element in the safety of the investment, when made, lies in the fact that the borrower, besides paying his interest from month to month, is also paying dues on the stock borrowed upon, which the association also holds as a collateral, thereby increasing from month to month the safety of the security.

For this reason there is little danger that an investment, safe when made, will ever become unsafe. While, on the other hand, if from an error of judgment or otherwise a security is accepted that is not "gilt-edged," it will grow better from month to month, while the borrower continues to pay his monthly dues and interest. The expenses of conducting the business are small. Usually no officers receive pay except the secretary and treasurer, and their salaries are small. The fees of the attorney in perfecting loans are paid by the borrowers.

It will seldom occur that the funds cannot be loaned at legal interest, and often there will be competition among borrowers whereby a premium will be paid. There is also the important fact that the interest is paid monthly and loaned at once, whereby monthly compound interest is secured without the borrower having to pay compound interest. The entrance-fees on stock issued, the fines on defaulted payments, and transfer-fees will often pay all the expenses, and leave the interest premiums and shares of profits left by the withdrawing stockholders to be distributed in dividends, thereby securing to the stockholders a larger interest than any other form of savings institution can pay.

2. An association of this character can be conducted successfully in any business centre having a population of five hundred, and thereby the benefits of an "institution for savings" can be secured by the many villages that have not sufficient population to maintain a savings bank.

3. As a means for stimulating savings, such an association is more potent than the savings-bank for several reasons. The depositor in the latter may withhold or deposit at his pleasure, or, having deposited, he may easily withdraw the money and use it to satisfy some present want, the gratification of which is not a necessity. He does not feel himself united with others in his endeavors

at saving. But, when one has taken stock in an association, he has entered into an agreement to pay a certain sum weekly or monthly. He has a definite aim and purpose, and has agreed to suffer a fine if he fails. Some, at least, of his fellow-stockholders will know of his failure, his pride will be stirred, and he will be more certain to save the amount of his dues, appear at the stated meetings and pay them, than he would if he were depositing in the savings-bank. When he has paid them, they cannot be obtained so easily. He will have to give thirty days' notice in writing and surrender some share of the profits if he withdraws. He has a feeling of ownership in the association, a vote in electing its officers. He has a social time on the evening of its meetings, makes new acquaintances, ascertains who the borrowers are, and what premium they had to pay for the loans if there was competition at the sale of the evening receipts. All these influences stimulate his endeavors: he takes pleasure and pride in them, and will talk with friends about what he is doing, urging them to take stock in the association. He is forming four habits which will be important in their effect upon his future welfare; namely, habits of promptness, saving, frugality, and industry. If he is a man of family without a home, he has learned a practicable way to get one. Moreover, it inspires hope, not alone in him, but in all his household. They are no longer content to expend all the earnings of the week in paying bills contracted during the week. As soon as a sufficient sum is accumulated to make up the margin between the purchase price of the home and the sum the association will loan upon the property, he can borrow the money and purchase the home, and his dues and interest will but slightly exceed the sum he was paying for rent. The unmarried clerk or artisan has learned a practical mode of accumulating a sum to go into business for himself in the future. The father, already thrifty, takes shares for his children,

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and trains them to habits of saving more easily than he could do otherwise.

The influences which radiate from these associations in a community are elevating, and the results which they induce possess in a high degree the desirable characteristic of permanency. They deserve the attention of all men who are interested in practical agencies for advancing the masses of men in their material welfare, by developing and stimulating the habit of saving some part of small incomes and the desire of owning homes. For the purpose of securing these results, no scheme has yet been devised and put into operation which is the equal of these associations, when organized under proper legislative guidance and restriction, and guarded by a wise State supervision.

**SEYMOUR DEXTER.**

### "THE POSITIVE THEORY OF CAPITAL."

Professor Böhm-Bawerk's *Positive Theory of Capital*,\* the promised sequel to his *History and Criticism of Theories of Interest on Capital* (1884), appeared early in January of the current year. A short sketch of this important book will serve to supplement the account of the Austrian school of economists, given in a recent number of this *Journal*.†

By Capital, in a general sense, the author understands all "products used to procure goods." This definition excludes land and labor as not being products; and it includes private capital as well as social capital,—the means of procuring goods by hook or by crook for the individual as well as the means of procuring them for the whole body of men by production. It is the latter (or social capital) that is discussed in the first part of the volume before us; and, where "capital" occurs without an adjective, we are to understand by it, not a means of income, but a means of production. Private capital has its share of attention in the second part of the book, where Interest is the subject.

Social or productive capital is further described as "a group of intermediate products," or, in other words, products which are the means to the making of other products. The definitions of other economists are briefly examined. We are shown, for example, that Senior was wrong in explaining capital as mere abstinence, though so far right that capital is not possible without abstinence or saving, the said abstinence or saving having in reality much more than a merely negative character. A dozen other definitions fare little better than Senior's.‡ There is just enough of this critical and historical element to make the present book nearly complete in itself apart from its predecessor.

Capital, then, is something different from land; but it is

\* *Kapital und Kapitalzins*, III<sup>e</sup> Abtheilung: Positive Theorie des Kapitals. Innsbruck, 1889.

† October, 1888.

‡ *Kapital und Kapitalzins*, II., Book I. § iii.

not placed on an equal footing. It is dethroned from its place in the time-honored trio of productive agents,— "Land, Labor, and Capital." The notion that capital had an independent power of production was due to the supposed need for a counterpart to the third member of the trio of incomes,— "Rent, Wages, and Profits." These were really separate incomes, but their counterparts were not in the same sense separate sources of production. The only independent agents of production are natural forces (called by metonymy "Land") and human labor. There is no third. Capital is neither an agent nor an end, but a means. When a stone kills a man, the thrower, and not the stone, commits murder; and, when capital results in a product, it is man and nature that are responsible for the production.

If capital is not productive, what, then, is its function? The answer is as follows: In production, man slips alongside of natural forces and turns their work to his purposes. Now, he finds that he gets the best result, as a rule, when he makes use of them in a long and indirect rather than a short and direct process. Their longest way round is his shortest way home. The long ways, however, are precisely the ways of capital. Capital forms the steps in a roundabout journey. Once the journey has been made, no doubt all later journeys of the sort are shortened. It is the first steps that cost. Once the net is made, more fish are caught, and caught more quickly, than by the line or the bare hands. But the first making of the net was a long and slow process. If, indeed, the way of capital were always (what it is sometimes) not longer, but shorter, than the direct way, there would, as we shall find, be no interest on capital; for there would be no loss of time involved in the employment of it. Interest on capital is due to loss of time implied in a long as against a short process of production. That is Böhm-Bawerk's theory in a nutshell.\* Jevons had spoken of all production by capital as requiring a "lapse of time between the beginning and the end of industry," but

\* In the January number of this *Journal*, Professor Patten of the University of Pennsylvania, in an article on "The Fundamental Idea of Capital," published views which are in many respects strikingly similar to those of Professor Böhm-Bawerk, though they must have been reached in entire independence.

he did not see how vital was this lapse of time to the very existence of interest.

We must approach this vital question through the theory of Value, which is an essential preliminary in all discussions of Distribution. The theory of Value held in common by the Austrian economists has been already described in this *Journal*.<sup>\*</sup> The earlier essays of our author on this subject have been incorporated in his new book, and we need only notice such portions of his earlier exposition as have been amplified by him for better application to the particular subject before us. The chief is perhaps the doctrine of the value of complementary goods. Menger had long ago defined capital itself as a "total of complementary goods of higher rank." The goods in a complementary group have, as a group, a value that is different from their value taken severally. Ink and pen, rifle and cartridges, right and left hand gloves, are specially obvious examples; but their name is legion, and includes, we may say, all "freely produced" goods whatsoever. Now, when any parts of the complementary group are replaceable by substitutes, those parts have, in separation, only the value of those substitutes. If some bricks for the building of a house are destroyed, others are easily procurable; and the value of the bricks will be only the value of the easily procurable substitutes. But, where any one of the parts is irreplaceable, then the value of that part will be equal to the whole difference between the separate values of the replaceable goods (say, the bricks, mortar, wood, lath, and plaster) and the value of the entire house. We should, even in common experience, deduct the former from the latter, and attribute the value of the house (*i.e.*, its special value as a combination of all these and the remaining elements) to such irreplaceable features as situation or architecture, or whatever tended to make it in any sense unique. Common language gives the irreplaceable factors the credit of the whole. It is as when we speak of "the land" as producing a rich or a poor crop, though the ploughman, the plough, the sower, and the reaping-machine had all a hand in it. The replaceable goods are reckoned as Cost, and the rest of the means of production get the credit

\* October, 1888.

of the production itself. In a factory, for example, the production is, in common language, ascribed to the managing employer, because it is his directing skill that is supposed to be the one irreplaceable factor in the business.\* The complementary character is more plainly stamped on some groups than on others, but there is a sense in which every process of production whatever involves a complementary group; for every production involves a combination of land, labor, and capital, and, so long as we respect the *caveat* above mentioned, we should not be inaccurate if we assigned to these three their shares in the value of any product in accordance with the above principle of Complementary Value. We should then distribute the shares as, respectively, rent of land, wages of labor, and interest of capital. By the method of Residues, it might even be thought possible to ascertain the amount of interest by deducting wages and rent from the total. But all that we could really discover in this way would be the gross returns to the whole process of production, not the net interest and profits. Profits, indeed, we may cease to consider as a special part of this inquiry; for (according to our author) what of it is not wages of management is the gain of speculation or opportunity, and falls under a different category from interest. Now, by the doctrine of Complementary Value, we should more naturally expect to find nothing over at all, after the said deduction of wages and rent, than to find a surplus called Interest; we should expect all to go to the irreplaceable land or to the irreplaceable skill of the managing employer.

Interest, therefore, is still a problem. It had been shown † by our author that the value of the means of production lags behind the value of the finished product. How and why does this come about?

The explanation lies in the difference in value between present and future goods as such, whether they are goods ready for consumption or products converted into capital. All

\* The allocation of the shares in the whole value to the several factors is a subject treated with great skill and fulness by Professor Wieser in a recent monograph on *Natural Value*, published in Vienna at the end of last year.

† See *Quarterly Journal of Economics*, October, 1888, p. 21.

economic action or husbanding of goods depends on the psychological fact that human motives include the idea of future as well as of present satisfaction. The greater part of our stock of goods is not for present, but for future use. The greater part of our motives relate to future satisfaction. The economist accepts this as a fact of every-day experience and as implying the commensurableness of present and future wants in men's estimates of Value. Men habitually compare present wants and satisfactions with future wants and satisfactions. They value present goods and future goods in one and the same way; namely, by the measure of their actual and their probable resources,—in one and the same way, but not at one and the same rate: "also, but not likewise." Their estimates are usually to the disadvantage of the future. "A bird in the hand is worth two in the bush." "*Bis dat qui cito dat.*" Such maxims imply that, other things being equal, the present is more to a man than the future. But other things may not be equal, and the future may be more to a man than the present. An annuity twenty years hence may, through his probable slackening of energy and need of retirement from business then, be of greater "subjective value" to him than it would be now. So ice in the month of February is less valuable than it will be in July. To a crew now in port, water is less valuable than it will be next week in mid-ocean. To a large body of men, whom we call capitalists, present goods and future are, on the whole, of about equal (subjective) value: they have more than enough for present wants. Ordinary men (as distinguished from wise men) are tempted by their own imperfect grasp of the future or by weakness of will or by a sense of the uncertainty of life to give even more weight to the present than it ought to have as against the future; and the final utility of future goods appears smaller than it should be, because of the personal "perspective" in which the individual sees it. It will be observed that Professor Böhm-Bawerk admits that our criterion is not what every man thinks to be good, but what the wise men think to be so.\* Even the wise men, however, value present goods, *caeteris paribus*, above future. This gen-

\* Compare *Quarterly Journal of Economics*, October, 1888, p. 24.

eral superiority in value of present goods to future is of cardinal importance for our author's theory of interest, and it is to be regretted that space will not allow us to trace out in detail the long proof he devotes to it.\*

In the case of productive goods in particular there is a technical (or physical) reason for the difference of present and future, not to say past and present; and that is simply the tortoise's advantage in having the first start in the race. Means of production set working in the present, and forming part of a fruitful, because roundabout way of production, have clearly the advantage over what has not already begun its work, but only begins next year or later. The old maxim, "Never put off till to-morrow what you can do to-day," is certainly sound where success depends on the accumulated result of continuous efforts. Present means of production are therefore, *caeteris paribus*, superior to future.

Thus (to use the words of our author), "whether from the difference of men's resources in present and in future respectively, or from their tendency to undervalue future joys and sorrows, or else from regard to the technical superiority of present goods over future,—in any case, the overwhelming majority of human beings set a higher subjective value on present than on future goods otherwise identical. From such subjective valuations arise, in the general market, a higher objective value in exchange and higher price for present goods. The said higher objective value and price react on subjective valuations, and thus give to present goods a higher subjective value in exchange,† even with those persons for whom (through their personal circumstances) such higher subjective value would not otherwise have existed. Finally, the levelling tendencies of the market make the depreciation of future goods bear a regular proportion to their degree of futurity. Accordingly, in the economy of nations, future goods are depressed both in subjective and objective value more or less deeply in proportion as they are more or less

\* *Kapital und Kapitalsins*, ii. 261 et seq.

† See *Quarterly Journal of Economics*, October, 1888, p. 13. Subjective value in exchange is the importance to me of an article exchanged by me.

remote from the present."\* This is the origin of economic interest, whether on loans, employer's capital, or fixed capital.

In the case of a Loan (*Darlehen*), as distinguished from a case of Hiring-out, we have simply an exchange of present goods for future; the interest represents the difference in value between two precisely similar goods, of which one is present and the other is future. As difference in Space has always been thought enough reason for exchange of one article for another, say of a field far from my house and near my neighbor's for a field near my house and far from my neighbor's, so difference in Time is an equally sufficient reason. There is no need to imagine, as some have done, a "use" of the article which is separable from the article itself. The article lent (say a crop of corn) is not only used, but used up: no "use" of it remains over, when the time comes for repayment. What is returned to the lender, even where there is no fraud whatever, is an article which is physically different, though it is legally and economically equivalent. The payment of the premium (or in exceptional cases of the discount) on the difference in time is usually made by instalments; and this accidental circumstance has caused the false impression that the payment of the premium is made for something existing separately from the thing lent. But the value of the goods eventually repaid and the value of the several "interests" paid in the way of instalments are together, normally, no more than equal to the value of a future good transferred vicariously to the present before its time.

The second case, or Interest on Productive (or Social) Capital,<sup>†</sup> is less simple. In the following statement of Böhm-Bawerk's positions in regard to it, no violence has (it is believed) been done to his thought, though some liberties have been taken with his language.

Present means of production will (on the principles just explained), other things being equal, bear a higher value than future means of production. But, as only *means* of production as distinguished from finished articles, they are in much

\* *Kapital und Kapitalismus*, II. 299.

† *Ibid.*, II. 215 et seq.

the same relation to the finished articles as future finished articles to present finished articles. They are physically present, but by deliberate human purpose they have been made, economically, rather future than present; and, till they have issued in their product, they have, at least in relation to products, the inferiority of future goods to present goods. Accordingly, the value of the means of production is normally found to lag behind the value of the finished article.\* The inferiority of the former seems the more conspicuous when we regard consumable goods or finished articles as either themselves food or easily convertible into food for workmen, and therefore as being the condition without which the potential product will never become actual. Food is not itself capital, but it is a condition under which capital results in its finished product. The food supplied men to-day enables them to work to-day at a process of production which will bring them finished goods two or three years hence, but no food, in the mean time, to support life while they are at work.

We have next to remember that, of several alternative ways of production, it is not necessarily the one that leads to the greatest quantity of produce that leads also to the greatest value; and it is the latter, not the former, that determines economic superiority. Great quantity and great value are, indeed, almost inconsistent with one another. In the second place, productiveness, even in the case of goods freely produced, cannot be extended and expanded indefinitely at the same rate of increase, "or else we should spin all our cotton in the one most favorably situated gigantic mill."† There is a law of decreasing productiveness not only in agriculture, but in manufacture.‡ Taking these considerations together, we see why it is impossible to pronounce off-hand whether the most profitable production will be the longest or the shortest or (though this is the most likely) an intermediate. The old formula that normal value was equal to cost together with interest does not help us, even if we paraphrase interest as "the agio of present over future." Of two or three alternative

\* See *Quarterly Journal of Economics*, October, 1888, p. 21.

† Mr. S. Webb, in *Quarterly Journal of Economics*, January, 1888, p. 204.

‡ *Kapital und Kapitalzins*, II. 80.

ways of producing the same article, the difference in quantities produced, which is usually in favor of the longer ways, might overcome the difference of time, which was in their rivals' favor, and lead to a greater aggregate of value as well as quantity. A short way (A) might thus, for example, secure 100 units of value, an intermediate (B) 250, and a long (C) 350, the later (D, E, F, etc.), though resulting in greater quantity, falling off in value to 300, 200, and so on. A particular process (E) might take a long time, and yet yield, after all (because of decreasing productiveness), so very little more than the one next to it in productiveness that the margin of difference is swallowed up by its futurity. An investment to which this happened would find itself just outside the paradise of profitableness, and the one next above it would be the final or marginal\* investment, as being the least profitable of the "nevertheless profitable" investments. The product of this final investment would be the final product whose value rules the value of all its kind, by whatever other method produced. The competition of the capitalists themselves will prevent the value of that product which is got by the final way of investment from becoming or remaining greater than the amount of the premium on present, as compared with future, goods. Anything beyond it would be the gain of the speculator, and not the interest of the capitalist employer.

Let us see how the capitalist employer proceeds with his investment. In the market of labor, he represents the demander over against the workmen, who represent the suppliers and who are (we may assume) without capital. He is clearly in a position of advantage. If he has any preference, it is rather for future goods than for present, whereas to the workmen the present goods mean their livelihood. They are forced to sell their labor, for the alternatives are either to starve or to work at methods of production (say hand-loom weaving) which are obsolete and do not yield enough to support life.† In the market of the means of living (which we

\* "Marginal utility" is a happy phrase used by P. H. Wicksteed, *Alphabet of Economics* (Macmillan, 1886).

[See also Professor Patten's note on "The Margin of Cultivation," p. 336 of this number.]

† See the tables given in *Kapital und Kapitalzins*, ii. 403-404.

may call briefly the market of food, though our author includes all that supplies the several wants made necessary to men by their several standards of living), the workmen are in this case the demanders, and the supply consists, roughly speaking,\* of the whole existing stock of finished goods in the community, the function of this stock being to support the works in the interval between the investment of capital and the completion of production. The "advances" of food, however, need not be the full quantity that will in the end be required during the whole period of production; for the capital is invested by stages, and the food may be in like manner advanced to the workers by stages also. The first advances may be little more than half of the quantity of food that will be ultimately needed. Yet the demand for present consumable goods—or, in other words, the demand for the means of living—will always exceed the supply.† There will always, even from this point of view, be a premium on present over future goods, and therefore an interest on capital. It is simply a special case of the general principle that the limitation of the supply of a needed article will be the cause of value.

There is one more case to be considered,—interest on durable goods in general, and fixed capital in particular.

The explanation, however, is similar. In the case of all perishable articles (including "circulating capital"), the value plainly depends on the final utility of the total of the services they render. The thing and the uses of the thing are, even to the vulgar eye, inseparable. Now, to the eye of pure reason, the same is true of the durable article. Its value is not equal to its total services, but to their final utility; and the final utility of a future service is less than the final utility of a present in proportion to the length of time that lies between them. Therefore, we ascertain the value of a durable article,—say, a gate or a house,—not by adding its total services, which might be indefinitely numerous and go on for a century or two, but by adding the final utilities of them.

\*The exceptions are given below, p. 349.

†Here, again, our limits of space forbid us to reproduce our author's extended proof.

The latter will give us a series, not of identical, but of dwindling items. Suppose a half-acre field to yield 20 bushels of wheat on an average every year, the value of that field is not the value of the said 20 multiplied by infinity, but the value of 20 present bushels added to the value of 20 of next year, which are only equal (*ceteris paribus*) to about 19 of this year, and to the value of 20 of the third year, which are in value only equal to, say,  $17\frac{1}{2}$  of this year, and so on. We should thus get a total of diminishing items,— $20 + 19 + 17\frac{1}{2} + 15 + 12\frac{1}{2} + 10 + 7 + 4 + 1 + 0$ , the sum of which is not infinity, but 106, or the value of 106 bushels; and the price of the field would be not infinity, but (at 5s. a bushel) £26 10s. The value of land itself is only a particular case of the value of durable goods; and we see how a man may pay the full value of the land and yet receive, year by year, a net profit from the rental of it. He pays the present value of the future services of the land, knowing that "the future belongs to him who can wait." He waits accordingly; and the future goods, which he bought when they were still future, come to him when they are present, and therefore more valuable. In this way, though he paid the full price, he reaps a net income. Ricardo's theory did not carry us so far: it explained only the gross returns, and not the possibility of a net rent from the land. It rightly applied to the value of agricultural produce the principle of final utility and of the value of complementary goods, doctrines of which it had unhappily made no use in any other connections. But Ricardo's reference to the "indestructible powers of the soil" betrays the defects of the theory. The value of a quarry exhaustible in fifty years would be no less than the value of a field yielding an annual produce of only the same value as the quarry's; and yet the field would probably be, for all human purposes, indestructible. The lender of money, the employer of labor, and the purchaser of land have one feature in common,—they hold the present cheap in comparison with the future, and they deal with men who hold the future cheap in comparison with the present. The gains, so far as they are mere interest, are no injustice to the latter. Of course, "like other human insti-

tutions,"\* interest has its abuses and perversions; but, in itself, it is a necessary economical category, and not merely a historical one.

The case of fixed capital, being the case not of durable goods in general, but of durable "products used for production," has, no doubt, complications of its own. If nearness to the final product lessens the depreciating effect of futurity, nearness to the point where the fixed capital becomes exhausted or worn out has a contrary effect. In many cases, the services or uses of the fixed capital are detached in the course of production and have a separate embodiment of their own: the first yarns are turned off and dismissed from the mill to the factory, though the life's work of the spinning machinery will last for years afterwards. But these belong to the many complications due to the highly organized division of labor in modern industry, where what is economically a single process of production is broken up into branches treated separately by separate trades. In all essential respects, interest on fixed capital is like interest on any other durable goods.†

We have thus seen the cause of the existence of interest. We have now to see the causes that make interest high or low. Let us take the question in its most difficult form, where there is competition of traders in open market. Let us simplify the problem first by supposing that the finished goods in the market are offered in demand for labor, and for nothing else; second, that the market embraces the whole people, so that in dealing with it we are dealing with the whole economy of the nation; and, third, that all branches of production concerned have the same productiveness and the same scale of increments in productiveness corresponding to their long and short methods of production.

Our first difficulty will be with labor; for, unlike other goods, labor is not subjectively of a fixed value, but owes its value to its anticipated products. The buyer of any other

\* *Sic, Kapital und Kapitalsins*, II. 385, cf. 398. The phrase is less felicitous than usual; for it suggests deliberate human invention, which is certainly not meant.

† Here and elsewhere, our author might have given us a few illustrations, say, from Babbage's *Economy of Machinery and Manufactures*,—e.g., pp. 51, 100, 110-112, 174, 211, 225, 231, 301 (ed. 1832).

article knows the article's precise importance to him before he buys it; but, in going to purchase labor, he does not know what the value of it is to him, except by the anticipated value of its possible products. On the other hand, given the value of the product, the profitableness of its production depends partly on the wages paid to the workmen that help in the production. But we have fortunately a fixed point here, which is not fixed in other cases,—the total of the quantities that pass from the employer to the laborers; for we are bound to assume that the two parties, one from necessity and the other from choice, will in every case come to a bargain, and therefore the whole available stock of consumable goods will pass from the one to the other. The rate of wages will be such as will employ all the workmen,—non-employment is exceptional and due to dislocations in the industrial organism,—and the rate of interest will be determined by the productiveness of the last applied portion of capital that is economically applied at all: Von Thünen was quite right on this point.\* The special determining elements are the amount of the fund of subsistence, the number of workmen, and the scale of productiveness. Interest is high, if subsistence is small and if workmen are many and if the productiveness goes not increasing with large increments. It is low, if the reverse be the case. Experience confirms these positions, for it shows that, with the increase of the means of subsistence, the rate of interest declines; that the said rate of interest depends, not on absolute amount of capital, but on its proportion to the working population; and, finally, that the discovery of new and advantageous methods of production or exchange sustains the increments in productiveness and keeps up the rate of interest,—whereas the contrary has the contrary effects.

When we remove our assumptions, our conclusions need little modification. Competition levels inequalities in the various branches of production and in the various markets of the actual industrial world. Skilled labor is translatable into a multiple of unskilled. Periods of production and increments

\*See his book *Der isolirte Staat*, as quoted in *Kapital und Kapitalzins*, ii. 421. A theory like Von Thünen's was given in this Journal by Mr. S. Webb, January, 1888.

of productiveness are unequal in different branches; but capital seeks equality of increment,\* though it may be not in the straight lines of our abstract tables, but in the zigzag lines of ordinary life. Further, finished goods are, as a matter of fact, wanted for unproductive consumers, land-owners and people living on interest of capital, as well as for productive laborers. We have to add to our three elements determining the rate of interest four more,—the extent and intensity of the demand for loans for consumption, the amount of rent of landlords, the sums paid to capitalists living on their profits, and, we should add, the economic temper of the whole population, employing and employed, whether they come near to the ideal of economy and provide for the harmonious satisfaction of present and future wants alike, or are preoccupied with the present to the neglect of the future. Still, these four elements are to the first three as minor electric currents caused by induction are to the chief currents themselves. The two groups act and react on each other, but the major remain the major.

Readers of this *Journal* will observe that Böhm-Bawerk has fully anticipated the wish expressed in a recent number,† that the Austrian economists should apply their theory to the various forms of modern industrial life. It has been impossible, however, in the limits of a short article, to follow every step of our author and cover his whole ground. For like reasons, it is impossible to do more than mention the kindred work of Professor Wieser on *Natural Value*,‡ which includes, amongst other things, an ingenious attempt to show that under a communistic régime the economical phenomena of value would all reappear, and the kindred work of Dr. Zuckerkandl on the *Theory of Price*.§

It may be well, however, in view of the challenge in the October *Journal*, to present the views of Böhm-Bawerk on

\* Equality of height of increment, Isohypsis [*iso-ypsis*], *Kapital*, II. 435.

† October, 1888, p. 28.

‡ *Der natürliche Werth*. Theil I: Der Werth in der Privatwirtschaft. Theil II.: Der Werth in der Staatswirtschaft. Von Dr. F. von Wieser. Wien: A. Hölder.

§ *Theorie des Preises*, mit besonderer Berücksichtigung der geschichtlichen Entwicklung der Lehre. Von Dr. Robert Zuckerkandl, Wien. (Leipzig, 1889.)

the Wages of Labor in somewhat greater detail. Wages (he says), being an easier theoretical problem than interest, cannot usefully or logically be described as interest on personal capital. They are payment of labor, and enter into the "cost" of goods, like any other replaceable factor of a complementary group. Their amount is determined, on an average, not by a wages-fund, but by the mutual proportions of the fund of subsistence, the numbers of the laborers, and the productivity of the dominant industries. The wages-fund which the English economists took for one of the two factors in the solution of the problem was really the very problem itself. What we want to know is why the amount given to laborers is high in one case and not in another. The English economists, too, did not sufficiently observe that, if we take the total fund of subsistence at any given time, we do not know whether it will be devoted to paying laborers for one year or to paying them for six, whether it is to be spent on a directly remunerative enterprise or sunk for some years in machinery or other fixed capital. We must give up the theory of a wages-fund; but we do not, therefore, accept the socialistic view that the laborer who gets less than the ultimate value of his product is defrauded of the difference. There only seems to be a fraud when we judge of the wages from one point of time and the value of the product from another. The surplus value is simply the difference between present and future; and it appears in the case, not only of the product of labor, but of agricultural or, indeed, any other produce: 100 future bushels are not paid so highly as 100 present, 100 calves as 100 cows, 100 saplings as 100 trees. Even under a socialistic direction of industry, this difference would appear; for socialism itself cannot make future into present. Is a forester who plants a row of saplings that will, in the remote future, be worth £100\* to be paid that sum in wages now or that sum in wages then? The latter course means starvation to him, the former unfairness to his fellow-workers, whose products are (like the baker's, for example) realized at once. But, if he gets the whole £100 neither now nor in the future, he will probably be paid at a rate equal to his fellows; and what is over of the £100 which

\* Or 100 units of value, whatever be the units chosen.

he will have produced will be secured, as the years go on, by the whole society for the general benefit. There is thus an "exploitation" of this worker for the general good. The difference between present product and future product has perforce been regarded, and the confiscated surplus value has been nothing more or less than interest. Confiscation for the general good does not transform it into wages any more than a selfish use of wages transforms them into profits.\* Interest, in short, has an economical essence, which must be distinguished from its historical accidents. The essence of rent is not the payment of a tenant to a landlord, but a surplus produce that would go to the peasant owner of a fertile farm, or would, under socialism, be taken away from him for the benefit of the general public. In the same way, it is no part of the essence of interest to be a payment, to a wealthy individual, of a surplus produce that the accidents of birth or opportunity enable him by law to confiscate. Such accidental circumstances may surround it now, but they may be conceived to disappear. The majority of men may not always, as now, be under the absolute necessity of working for wages. But, even if private property is abolished, the essence of interest would remain; for no development of human society will abolish time.

It would be bold to say that Professor Böhm-Bawerk has said the last word on the theory of Interest. But his theory so happily combines ingenuity with simplicity, and he has shown himself so frank in anticipating objections and facing difficulties, that his book must be regarded as one with which all subsequent writers will have to reckon.

JAMES BONAR.

\* *Kapital und Kapitalsins*, ii. 394, 395.

## NOTES AND MEMORANDA.

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It is announced that a reprint of Arthur Young's *Travels in France* is to be prepared by Mr. A. W. Hutton, with a preface by Professor Thorold Rogers. Young's narrative and his later comments on the progress of the Revolution are to be given; but it is reported that "the agricultural and other statistics, which are now no longer of general interest, will be omitted." There can be no doubt as to the historical value of the promised reprint, and it is to be hoped that its economic interest will not have been impaired by the proposed excisions.

A rival reprint of Young's *Travels* is also to be issued in Bohn's Standard Library. This is to be abridged and edited by Miss Betham-Edwards, who is assisted by Mr. Arthur Young, grandson of the author.

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"BRADSTREET'S" continues its reports on labor troubles by giving a summary of the strikes and lock-outs recorded in its columns during the year 1888. A comparison of the recorded totals with those for the two years preceding shows a marked falling off in the number of striking workmen. We reproduce the figures:—

In 1886, there were 350 strikes, involving 448,000 workmen.
1887, " " 884 " " 346,000 "
1888, " " 679 " " 212,000 "

The figures for 1886 are doubtless defective: the recording of strikes began in that year, and many smaller movements then escaped notice. We may fairly conclude from the figures that wide-spread strikes, involving many employees at once, like those of Knights of Labor in 1886, are becoming less common.

The following summary is given of the results of the struggles for the last two years:—

	1887	1888
Strikes succeeded,	368	265
Strikes failed,	504	419
Strikers succeeded,	131,000	107,000
Strikers failed,	215,000	105,000

Turning these figures into per cents., we find that in 1887 about 42 per cent. of the strikes succeeded, and in 1888 about 36 per cent.; but in 1887 only 38 per cent. of the whole number of strikers succeeded, and in 1888 more than 50 per cent. On the whole, therefore, the struggles of 1888 turned out better for the workmen than did those of 1887. Still another summary classifies the causes of the strikes, as follows:—

	Strikes.		Strikers.		By Per Cents. of Total.			
	1887	1888	1887	1888	1887	1888	1887	1888
Wages and hours,	542	373	213,300	145,500	62	55	62	66
Unionism, . . .	225	196	77,300	37,500	26	29	22	17
Sympathy, . . .	68	15	47,000	16,400	8	2	12	8
Miscellaneous, . . .	37	98	8,300	12,500	4	13	2	6
Totals, . . .	<hr/> 872	<hr/> 679	<hr/> 345,900	<hr/> 211,900				

It will be noticed that the number of strikes as to which the result or cause is stated is less than the total number reported as having occurred. In a few cases nothing seems to have been learned except that a strike had taken place.

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In a previous issue of this *Journal* (vol. ii. p. 215, January, 1888), some account was given of the bill prepared by the German Imperial Government for the extension of the system of compulsory insurance to the contingencies of old age and permanent disability. The bill there described has been much amended, and an almost entirely new draft was submitted to the Reichstag at the beginning of the current session. After a first reading, the new bill went to a commission, by which it has been further amended; and, at last accounts, it was before the Reichstag for a second reading. It is probable that many changes will still be made, and we reserve a detailed

account of this addition to the insurance system until the act is finally passed. It is already clear, however, that the scheme will take a very different shape from that first projected.

The salient features of the bill as it now lies before the Reichstag are: first, that the machinery for old-age insurance is entirely independent of that for sick or accident insurance. There are to be government insurance bureaus, some thirty in all, distributed geographically through the Empire, and supervised by an Imperial Bureau. The original scheme of putting old-age insurance into the hands of the *Berufsgenossenschaften* seems to be given up for good. Another change is made, also of a distinctly bureaucratic stamp. Neither employers nor employees will have anything to do with the system, except to pay the contributions and receive the pensions. Next, the benefits to be yielded to the workmen are much increased. It was felt on all hands that the first draft did not give the workmen appreciably more than the poor-law already yielded, and certainly not enough to calm their socialistic feelings. Consequently, the pension for old age begins at sixty-five instead of at seventy. Women get as much as men. The pensions are not uniform, but vary with the wages earned, contributions varying similarly; and, for this purpose, work-people are divided into six classes, according to the wages earned by them. Better provision is made for the immediate future, the transition period before the scheme can go into full effect; and in various details the workmen are more liberally provided for. Lastly, this more liberal treatment calls for much larger contributions. The Empire still engages to pay one-third of the premiums, the remaining two-thirds being shared between employers and workmen.

The Empire's share, under the original scheme, was expected to be for the first year about four million marks; under the amended scheme, it would be over twelve million marks. For the sixth year, the Empire's payments would be over twenty-eight millions, as against an estimate of about thirteen millions under the original scheme. The private contributions, of course, go up in the same ratio. This, too, although the esti-

mates rest on a proposal to raise in any year only such funds as will meet the liabilities incurred for the next ten years. Obviously, many of the pensions granted in any one year will run much more than ten years, especially those granted in case of disability. The heavy financial burdens entailed by the scheme account for this proposal to shift to future generations the liabilities of the present.

THE late Comptroller of the Currency, in his report for 1888, calls attention in several places to the symptoms of arrested growth of the national bank system, which are beginning to follow the rapid withdrawal of circulating notes. Facts given in the annual report of the Superintendent of the Banking Department of the State of New York suggest a comparison between the progress of banking under national and State legislation respectively in the most important banking State.

The following figures for the last five years are collected from the two reports, capitals being given in millions:—

	<i>National Banks.</i>		<i>State Banks.</i>		<i>Trust Companies.</i>	
	No.	Cap.	No.	Cap.	No.	Cap.
1884	318	\$83.3	89	\$22.1	18	\$13.
1885	317	81.9	92	22.3	20	14.2
1886	318	81.7	95	23.1	20	15.3
1887	322	85.6	105	23.8	21	16.6
1888	322	85.9	120	25.6	25	19.5

We have no space to remark on these figures at present further than to note two important facts: first, that the growth of banking in the State outside of the reserve cities is now under charters from the State; and, second, that the business and growth of the trust companies, which, with three exceptions of no great importance, are established in New York or Brooklyn, are imperfectly measured by their number and capital. The general law for the organization of trust companies adopted in 1887, *Laws of New York*, 1887, chap. 546, is understood to have stimulated their increase last year, and is likely to make this class of State banks still more formidable in competition with the national system.

## THE MARGIN OF CULTIVATION.

The expression "margin of cultivation" has become, through long usage, a classical expression for one of the most fundamental ideas of economics. It may seem out of place to take exception to the use of so well-known a term; yet it conveys the needed idea in a very concrete way, which fitted nicely into the economic system of the older economists, but is not in harmony with the ideas which many of the economists of to-day are striving to develop. It is easy to think of society pushing out continually upon newer lands, or trying to make its poorer lands tillable. The picture of civilization gradually working up a mountain-side is to most persons very alluring; yet the conclusions drawn from this concrete case have enough of the false in them—or, at least, enough of the apparently false—to obscure the real truth to which all agree. And this obscurity is likely to continue as long as a term is used which necessarily brings up a concrete picture.

The term is also defective, since it calls to mind a dynamic state of society. In a static state, where the equilibrium is perfect, there would be no concrete margin of cultivation, as we now picture it. Most economists agree that, even in a static condition, there would be no-rent increments of capital applied to land. These increments would, however, be found upon the first land cultivated, as well as the last. If used in this broad sense, there is also a margin of cultivation in the manufacture of commodities, as well as in the cultivation of land. All portions of the capital used in a factory do not give the same return for their use. Especially in the utilization of waste products, there is much labor employed which gives merely the minimum return. A part of the capital used in factories is as much at the margin of cultivation as is the last increment of capital used upon land. The term, therefore, is defective in many ways; and all economists ought to be willing to allow it to be so modified that the concrete portion may be cast away, without losing the central thought. Professor Clark, in his thoughtful essay before the late meeting of

the American Economic Association, suggested that the term "margin of utilization" be used. Society certainly utilizes its most productive instruments first, and then proceeds to make use of the less productive ones. The change in the term is an excellent one, so far as it goes; yet there is as much objection to the use of the term "margin" as to "cultivation." The dynamic thought is still retained, from which confusion is likely to arise. Why could not the term "limit to utilization" be used? Or perhaps "final limit to production" would be plainer. It might be well to follow the analogy of the term "final utility of commodities," and say "final utilization of productive instruments." I have no desire to urge any term; but, since Professor Clark has made so admirable a start in the right direction, it would seem an excellent opportunity to introduce a new term to which every one could heartily assent.

As an illustration of the use of a broader term, I will refer to the suggestive article in a recent number of this *Journal* by Mr. Sidney Webb. He wishes to locate the position of the man who uses the minimum of capital and ability, and after the traditional custom seeks to find him at the margin of cultivation.\* Certainly, the men at the margin have much more than the average ability, and they also make use of a large amount of capital. For these reasons, the use of the term "margin of cultivation" by Mr. Webb obscures a thought of vital importance to a correct correlation of the laws of distribution. The man with minimum ability and capital is much more likely to be found in the cities than upon new land; and such men are in much larger numbers in an old country than in a new one. They sweep our streets and carry off our refuse matter. They are employed in all the factories to utilize waste products, and as assistants to higher classes of labor.

It is only by a wrong classification that it seems that the cheapest labor of our factories use much capital. If a firm use a million dollars worth of capital and employ a thousand men, it is wrong to say that each man uses a thousand dollars worth of capital. Such reasoning is as defective as to say that the utility of the last cup of water is the average of the total utility of the whole supply of water. The proper way to get

\* See *Quarterly Journal of Economics*, II. 197.

the amount of capital used by the last man is to discover how much less capital would be used if he were not employed. Measured in this way, the amount of capital used by the least efficient man in a large factory would be zero, or very near that limit. It is likely that several men out of the thousand could be discharged before any of the capital of the firm would cease to be used.

The position of the least efficient laborer shows where the final limit to production is; and it is only as land gets its share of such labor that it can be truly said to be at the margin of cultivation. The lack of mutual relation between the laws of distribution, which Mr. Webb so clearly presents, is partly due to the historical circumstances connected with their gradual development, and partly to the concrete manner in which they have been viewed by economists. It will be necessary to outgrow the limitations arising from the historical development and the concrete expression of these laws, before they can be so stated that the mutual relation between them can be clearly seen.

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## ANTI-CHINESE LEGISLATION IN BRITISH AMERICA.

The anti-Chinese legislation of Canada\* is very much like that of Australasia. The Chinese Immigration Act, 1885,<sup>1</sup> puts a tax of \$50 on Chinese entering Canada, by vessel or otherwise,<sup>2</sup> and restricts the number of Chinese a vessel can bring to one for every fifty tons,<sup>3</sup> with penalties on the Chinaman, the master, and the owner<sup>†</sup> for breaches of its various provisions,<sup>4</sup> similar to those imposed by the Australasian statutes, including forfeiture of the vessel, if the master lands or permits to land any Chinese before the duty is paid, or wilfully makes any false statement respecting the number of persons on board his vessel.<sup>5</sup> The exemptions from the operation of the act differ somewhat from the usual ones in Australasia.<sup>‡</sup> There is no exemption of British subjects, there is an exemption of the suite and the servants of diplomats,<sup>6</sup> a fee of one dollar is charged for temporary exemption certificates, and such certificates may be obtained by "every Chinese person,"<sup>7</sup> instead of being obtainable only by *bona fide* residents of the colony at the passing of the act or at the date of its going into

\*This paper completes the survey of anti-Chinese legislation in the British colonies begun in the last number of this *Journal*. The references made are, as before, to the Parliamentary blue-book of July, 1888, entitled *Correspondence relating to Chinese Immigration, . . . with a Return of Acts*.

† But no penalty on the charterer, as in the Australasian statutes.

‡The usual exemptions are British subjects, consuls and diplomats, crews, and Chinese with temporary exemption tickets. Queensland, Canada, and British Columbia, however, do not exempt British subjects; Queensland and South Australia and British Columbia do not exempt consuls and diplomats, and Victoria (p. 74, § 6) and New Zealand (p. 54, § 7) exempt them only from having to pay the entrance-fee, and not from the other provisions of their respective acts; Queensland exempts crews only from the entrance-fee (p. 81, § 11), Canada only by implication (the act applying only to persons "*entering* Canada," p. 60, §§ 1 and 4), and British Columbia only to the number of 20 (p. 67, § 5; p. 71, § 5). In Victoria, as I have said, there is no temporary exemption. The reports of the new statutes for the Northern Territory and of New South Wales do not give the exemption clauses (p. 4, No. 5, and p. 45, Nos. 89 and 81). There are no exemptions from the Chinese "Tax" and "Regulation" Acts of British Columbia.

<sup>1</sup>p. 60.

<sup>2</sup>p. 60, § 4.

<sup>3</sup>p. 60, § 5.

<sup>4</sup>p. 60, § 8; p. 61, § 7; p. 62, §§ 16-19.

<sup>5</sup>p. 61, § 7.

<sup>6</sup>p. 60, § 4.

<sup>7</sup>p. 61, § 14.

operation, as in Australia<sup>1</sup> and in British Columbia.<sup>2</sup> There is an exemption, also, of "tourists, merchants, men of science, and students," bringing certain documentary evidence of their identity, occupation, and object, "merchant" not to include "any huckster, pedler, or person engaged in taking, drying, or otherwise preserving shell or other fish for home consumption or exportation."<sup>3</sup> The amendment of June 23, 1887, exempts the wife of any person who is not of Chinese origin.\* Section 13 of the principal act (of July, 1885) contains the seemingly needless enactment that "the entrance-fee . . . shall not apply to any Chinese person residing or being within Canada at the time of the coming into force of this act," and that such Chinese person may get a certificate of residence for fifty cents.† Section 2 of the amendment<sup>4</sup> makes provision for allowing Chinese to pass through Canada without paying the entrance fee. No Chinese are allowed to land "until the quarantine officer has granted a bill of health, and has certified . . . that no leprosy or infectious or contagious disease exists among them," and "no permit to land shall be granted to . . . any Chinese woman who is known to be a prostitute."<sup>5</sup>

Perhaps the most important difference between the Canadian and Australasian anti-Chinese laws is that in Canada the controller must "keep a register of all persons to whom certificates of entry have been granted,<sup>6</sup> whether they come by sea or land."<sup>7</sup> Section 17 of the act of July, 1885, provides for the suppression of "any sort of court or tribunal composed of Chinese persons for the hearing and determination of any offence committed by a Chinese person," but it is

\*p. 63, § 1. This is the only instance, in the existing anti-Chinese legislation in all these colonies, of a special exemption of women, except in Tasmania, where the act applies only to males (p. 82, § 1), and in Victoria, where it applies to "any male adult native of China, or its dependencies, or of any islands in the Chinese seas not born of British parents [sic], or any person born of Chinese parents." (The Italics are mine.) The exemption or non-exemption of women from legislation against Chinese immigration is of little practical importance.

<sup>1</sup>p. 61. Cf. similar provision in New Zealand in 1881 (p. 87, § 13). Perhaps this is meant, like § 7 of the British Columbia act of 1885 (p. 71), to exempt Chinese who were residents, but temporarily absent, at the time of the passing of the act.

<sup>2</sup>p. 77, § 12; p. 79, § 9; p. 81, § 10; p. 83, § 10; p. 85, § 10; p. 87, § 14.

<sup>3</sup>p. 67, § 6; p. 71, § 6. <sup>4</sup>p. 60, § 4.

<sup>4</sup>p. 63. <sup>5</sup>p. 61, § 9. <sup>6</sup>p. 61, § 11. <sup>7</sup>p. 61, § 12.

not to be construed as preventing Chinese from submitting disputes to arbitration.<sup>1</sup> There is provision, apparently, for the summary trial of some of the suits and prosecutions arising under this act, but not of all.\* There is no provision for magistrates deciding "on their own view and judgment" whether a person is a Chinese. Beyond the points I have mentioned, Canadian anti-Chinese legislation differs in no important respect from that of Australasia.

With British Columbia, the case is quite different. The legislation of that province deals with the problem, so far as it is simply a question of Chinese immigration, by forbidding such immigration. "An Act to prevent the Immigration of Chinese,"<sup>2</sup> February 18, 1884, enacts that, "whereas it is expedient to prevent the immigration of Chinese into British Columbia,"<sup>3</sup> "it shall be unlawful for any Chinese to come into the province,"<sup>4</sup> and lays penalties upon any Chinese who hereafter shall come in;<sup>5</sup> and upon "any person who shall bring or assist in bringing into British Columbia any Chinese or who shall assist in any way any Chinese in coming into British Columbia,"<sup>6</sup> the penalties to be enforced by rapid and summary procedure,<sup>7</sup> the justice deciding, "upon his own view and judgment," whether any person charged or brought before him is a Chinese or not.<sup>8</sup> The act does not apply to "any Chinese actually employed as seaman, cook, steward, or waiter upon any vessel, wherein the number of Chinese so employed shall not exceed twenty."<sup>9</sup> Temporary exemption certificates are granted to Chinese who were *bona fide* residents of the province at the time of the passing of the act, and who shall have their photographs taken at their own

\* p. 62, § 22. All suits and all prosecutions for offences that are not made misdemeanors "shall be tried before one or more justices of the peace, or before the recorder, police magistrate, or stipendiary magistrate having jurisdiction."

† p. 66, § 3. The penalty upon the Chinese is only \$50, the amount of the usual entrance-fee; but the penalty on any one assisting him is sufficient to prevent anybody from paying his entrance-fee for him and from transporting him. He would have to walk from the United States or Canada, and would have to pay his entrance-fine some time, even if he has served his six months' imprisonment at hard labor for not doing so at first. (p. 66, § 2.)

<sup>1</sup> p. 62.

<sup>2</sup> p. 66.

<sup>3</sup> p. 66, § 2.

<sup>4</sup> p. 66, §§ 2-4.

<sup>5</sup> p. 67, § 7.

<sup>6</sup> p. 67, § 5.

expense, a copy to be kept and marked with the number of the certificate.<sup>1</sup>

The act of March 9, 1885, contains no allusion to the above act, although they are almost precisely alike. The only differences are that the act of 1885 adds those Chinese who had been previously to its passage *bona fide* residents of the province to the number who can obtain temporary exemption certificates,<sup>2</sup> makes provision for the return to the province, "free from the provisions of" the act, of any Chinese who had resided there within a year before the passing of the act, but who, at the time of its passing, were temporarily absent, and for the issue of a certificate to that effect to every such Chinese;<sup>3</sup> but also enacts that "it shall be lawful to impose a fee of \$5 for every certificate to be granted under the provisions of this act."<sup>4</sup>

The Chinese already in British Columbia are dealt with by an act of Feb. 18, 1884, which prevents them from acquiring crown lands (and from being granted authority by "a commissioner, as defined by the 'Land Act, 1884,' or any other person, to . . . record or divert any water from the natural channel of any stream, lake, or river" in the province),<sup>5</sup> and by the "Chinese Tax Act, 1878," and the "Chinese Regulation Act, 1884," which "tax" and "regulate" them as follows:—

The "Chinese Tax Act," after stating in the preamble that the Chinese "evade" certain taxes "by reason of the provisions of the acts [imposing them] not being applicable for the collection of taxes from Chinese,"<sup>6</sup> provides that those acts "shall not apply to Chinese, but, in lieu thereof, the following provisions shall be substituted: . . . every Chinese person over twelve years of age shall take out a license every three months, for which he shall pay the sum of ten dollars in advance,"<sup>7</sup> the collector being paid by a percentage on what he collects,<sup>8</sup> and having power to levy the amount of the license with costs, by distress not only of the goods of the Chinese person who has no license, but also "of any goods and chattels in his possession, . . . or of any goods and chattels found on the premises, the property of or in the possession of any other

<sup>1</sup>p. 67, § 6.

<sup>2</sup>p. 71, § 6.

<sup>3</sup>p. 71, § 7.

<sup>4</sup>p. 71, § 8.

<sup>5</sup>p. 66, No. 4.

<sup>6</sup>p. 68.

<sup>7</sup>p. 63, § 2.

<sup>8</sup>p. 64, § 3.

occupant of the premises.<sup>1</sup> If a Chinese has not a license lawfully issued to him, he and his employer are both liable to severe penalties;<sup>2</sup> and he is also liable, under penalty for failure, refusal, or neglect,<sup>3</sup> to work out the amount of the license fee on the public roads, at the rate of fifty cents a day, minus the cost of food, five per cent. for the wages of an overseer, and five per cent. for the wear and tear of tools,<sup>4</sup> the day's work being ten hours.<sup>5</sup> A Chinese must show his license on passing through certain toll-gates.<sup>6</sup> Every employer of Chinese must, under penalty,<sup>7</sup> furnish to the collector, when requested, a truthful list of all the Chinamen employed by him, directly or indirectly,<sup>8</sup> and must keep in his possession the license of each Chinaman in his employ, and show it to the collector when required to do so.<sup>9</sup> "Any information for any infraction of . . . this act may be heard and determined . . . in a summary manner."<sup>10</sup> In any prosecution for its infraction, the averment in the information that the Chinese had not at the time of the alleged infraction a license, lawfully issued to him, throws upon him the burden of proving that he had.<sup>11</sup> The same burden rests upon the person whose goods are distrained for being in the possession of or on the premises occupied by a Chinaman without a license, if the license is not produced.<sup>12</sup>

The "Chinese Regulation Act, 1884," begins by stating, among other things, that the Chinese "evade the payment of taxes justly due to the government, are governed by pestilential habits, are useless in instances of emergency, habitually desecrate graveyards by the removal of bodies therefrom, . . . and . . . are inclined to habits subversive of the comfort and well-being of the community."<sup>\*</sup> It imposes an annual fee of \$10 on every Chinese above the age of fourteen.<sup>13</sup> Its other provisions are similar to those of the "Chinese Tax Act," except the following: A Chinaman must show the license required by the new act at every toll-gate in British Colum-

\* p. 67. Cf. letter of Lew Ta Jen to the Earl of Rosebery (p. 56, Appendix I.), characterizing this preamble.

<sup>1</sup> p. 64, § 7.    <sup>2</sup> p. 64, § 8.    <sup>3</sup> p. 65, § 14.    <sup>4</sup> p. 64, § 12.    <sup>5</sup> p. 65, § 13.    <sup>6</sup> p. 65, § 16.

<sup>7</sup> p. 64, § 6.    <sup>8</sup> p. 64, § 5.    <sup>9</sup> p. 64, § 11.    <sup>10</sup> p. 64, § 10.    <sup>11</sup> p. 64, § 9.    <sup>12</sup> p. 64, § 7.

<sup>13</sup> p. 67, § 3.

bia.<sup>1</sup> A "free miner's certificate" costs a Chinaman \$15 instead of \$5,<sup>2</sup> which is the charge for all other foreigners;<sup>3</sup> and, if he engages in mining in contravention of the provision requiring him to have such certificate, he and his employer are each liable to a penalty not exceeding \$30.<sup>4</sup> Dead bodies of Chinese are not to be exhumed without permission.<sup>5</sup> The use of opium is prohibited, except for medical purposes.<sup>6</sup> Rooms must not be let or occupied unless containing 384 cubic feet of space for each person occupying them, and having each a window which opens at least two square feet.<sup>7</sup> In any proceedings under the act, the burden of proving that he is exempt from the operation of any of its provisions is on the defendant.<sup>8</sup> Pecuniary penalties may be recovered in a summary way.<sup>9</sup> Convictions shall not be quashed for want of form,<sup>10</sup> so long as the same is according to the true meaning of the act;<sup>11</sup> and the tribunal having cognizance of any matter under the provisions of the act may decide, upon its own view and judgment, whether any person is a Chinese, and whether any person who is a Chinese is of the age of fourteen.

A Chinese convicted of an offence under the act cannot appeal without giving notice in writing of his intention of doing so, furnishing security in the sum of \$100, conditioned to abide by the decision, and depositing a sum sufficient in the opinion of the convicting magistrate to pay "the costs and expenses of a jury" to try the appeal.<sup>12</sup>

It appears from the letter of Lew Ta Jen to the Earl of Rosebery, which I have cited, that this "Chinese Regulation Act" has been held by the Supreme Court of British Columbia, in the case of Bull *v.* Wing Chong,<sup>13</sup> to be *ultra vires* the Legislative Assembly of that province.

JOSEPH LEE.

\* The above-cited letter of Lew Ta Jen.

<sup>1</sup> p. 70, § 28. Another new provision is that of Section 16, which reads, "Sub-section (4) of the Schedule A to the 'Licenses Ordinance, 1887,' is hereby amended by adding thereto the following words: 'But no license shall be issued to any Chinese.'"

<sup>2</sup> p. 68, Appendix I. This decision was in August, 1885. See *British Columbia Law Reports*, vol. ii., part 2, p. 150.

<sup>3</sup> p. 68, § 12.      <sup>2</sup> p. 68, § 14.

<sup>4</sup> p. 68, § 15.

<sup>4</sup> p. 68, § 17.

<sup>5</sup> p. 68, § 18.

<sup>6</sup> p. 68, § 23.

<sup>7</sup> p. 68, § 19.

<sup>8</sup> p. 68, § 20.

<sup>9</sup> p. 70, No. 7.

<sup>10</sup> p. 68, § 20.

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## APPENDIX.

### ITALIAN FINANCES FROM 1860 TO 1884.

BY ALANSON BIGELOW HOUGHTON.

#### II.

##### a. FROM 1866 TO 1880.

We have now traced the financial history of Italy down to the time when affairs reached a culmination in suspension. For the rest, it remains for us briefly to consider first the course of events until 1880, and then the measures taken in 1881-83 to secure resumption.

The one political event during the period 1866-80 which concerns us is the occupation of Rome in 1870. From this time on there was an end to the great political questions that had so long been prominent in Italian life. For fifty years the radical parties\* had been striving to make Rome the capital of a new Italy. The Franco-German war gave the long-coveted chance. France had too much on her hands to interfere. And scarcely had the red breeches of the French troops been seen marching out of Rome, when the Italian troops came marching in. Rome was annexed to the kingdom and became its capital, and the Roman debt† was assumed and consolidated by the State.

The legal limit of the paper circulation ‡ before the suspension had been merely the provision that the National Bank, the National Bank of Tuscany, and the Tuscan Bank of Credit could issue paper to three times the amount of their specie reserves, the Bank of Naples and the Bank of Sicily issuing only certificates of deposit. After the suspension, the two

\* H. v. Treitschke's *Historische und Politische Aufsätze*, p. 390.

† *Bullettino Ufficiale*, 1883, p. 815 et seq.      ‡ Sachs, *L'Italie*, pp. 599, 600.

latter were permitted to issue to twice the amount of their specie reserves; and in October, 1866, the right of a triple circulation was extended to the Bank of Naples.

By the decree of May 1, 1866, a forced circulation was given the notes of the National Bank in all the kingdom, and to the notes of the Bank of Naples and of the Bank of Sicily in the Neapolitan provinces and in Sicily respectively, and later in the month to the notes of the two Tuscan banks within the Tuscan provinces. These banks, excepting the National Bank, were required to set apart at once and retain as an inalienable reserve at least two-thirds of their specie, and the National Bank was directed to furnish them gratuitously with its notes to an equal amount. A distinction was made, therefore, in that, while the notes of the National Bank had a circulation throughout all Italy, the notes of the other banks could circulate only within certain defined limits of territory. The National Bank was instructed to advance to the State, on deposit of securities, its notes to the amount of 250 mil. These notes were not to count as part of the bank's authorized circulation: they formed a separate debt, and became the first instalment of what later grew to be the very considerable amount of the government paper currency. Obviously, the notes of the National Bank played an important part in these transactions; for, in addition to their other functions and privileges, they formed in fact a State paper currency as well.\*

An effort was made by the Government to hold the amount of its paper indebtedness at 250 mil.; but the pressure became too strong to be resisted, and after 1867 the amount grew steadily larger. Scialoja declared † to the Committee of In-

\* Unfortunately, the decree made no provision for the case of a withdrawal of the small coin, since the forced circulation was given to the paper of the denominations already in existence, and the smallest note issued was for 20 lire. Naturally, as soon as the suspension was decreed, all the coin forming the subsidiary circulation instantly disappeared. This created at once a great need. In order to take the place of the small silver pieces, many savings-banks, pawn-shops, and other institutions of credit in places where the scarcity made itself most felt, put out small notes equal in denomination to the metallic types that had disappeared. These notes received no authorization by law. But they were a necessity; and by virtue of this fact they multiplied and circulated without authorization. *Vide Journal des Economistes*, March, 1873, p. 431.

† *Inchiesta*, vol. iii. p. 472, Scialoja's testimony.

quiry that he had not intended to make use of the forced currency beyond the limit of the 250 mil. necessary for the war: he believed, indeed, that payments in specie would be, in whole or in part, resumed in 1867. In that year, an effort was made by him to secure gold for this purpose; but his attempt was met by complete failure. In the succeeding year, Scialoja's successor, Ferrara, tried the same experiment, and with the same result. After this time, the problem of lifting the *corso forzoso* became the one great problem\* for each succeeding minister.

The amount of paper money crept steadily higher and higher, until at length it became evident that the issue must be restrained, and the law † of the 30th of April, 1874, was passed. Down to this time, the conditions under which the banks could issue were decidedly lax. The only limit fixed to the issue of notes was that they should bear a certain proportion to the metallic reserves, while the amount of the metallic reserves was left quite undetermined, and this, in the words‡ of M. Fouriel, was "not liberty, but license." The law of April 30 is of the very highest importance, in that it was the great preliminary step towards resumption. By this law the issue of notes was strictly confined to six banks of emission,—the five former banks of emission and the Roman Bank.§ These six banks were to form a syndicate, known as the *Consorzio*, which should furnish to the treasury notes not to exceed in amount one million of lire. The *Consorzio* was to make and renew these notes at its own expense, in return for which ser-

\* Cf. Sachs, *L'Italie*, pp. 603-616; also, *Mesures Proposées pour l'Abolition du Cours Forcé: Exposé des Motifs et Projet de Loi présenté à la Séance de la Chambre des Députés du 15 Novembre, 1880*, par M. Magliani, Ministre des Finances (et du Trésor *interim*) de concert avec M. Miceli, Ministre de l'Agriculture, de l'Industrie, et du Commerce, Rome, 1881, pp. 15, 16. I have throughout this article referred to the French translation of this report, as being more generally available than the Italian original.

† Those portions of this law which were not afterwards repealed by the law of April 7, 1881 (*vide* p. 396 of this article), may be found in the *Bullettino Ufficiale*, 1883, pp. 288-295. Cf. also *Dictionnaire des Finances*, publié sous la direction de Léon Say, pp. 344-347; Sachs, *L'Italie*, pp. 610-614; and Cucheval-Clarigny, *Les Finances de l'Italie*, pp. 8, 9.

‡ *Revue Internationale*, August, 1884, p. 671.

§ Formerly the Bank of the Pontifical States.

vice the State agreed to pay on them a small annual tax of  $\frac{1}{5}$  of one per cent. for the first four years, and of  $\frac{1}{6}$  of one per cent. afterwards. The notes were to have a forced circulation, as by the decree of the first of May, 1866, and the banks jointly were to be responsible for them, the government on its part securing the banks by a deposit of *titres* of the public debt. These notes were to replace the notes which the State had previously received; and the separation of the State paper from the notes of the National Bank was thus made complete. Further, the notes issued by the banks on their own account were to continue to be a legal tender as before for two years more,—this duration of time was afterwards again and again extended,—but they were to be redeemable either in specie or in *Consorzio* notes. The maximum of the note circulation was put at three times the paid up capital, estimated for each bank from its amount\* on December 31, 1873; but at least one-third of the notes in circulation must be secured by metallic money, and the remainder by discounts and advances on *titres*. This served to fix the total note issue at a maximum of 755 mil. Special provision, however, was made by which the State in times of commercial distress or of extraordinary need could raise this limit; but the total amount of the supplementary notes could never exceed  $\frac{1}{5}$  of the capital, and the time during which they might remain in circulation could not exceed three months. The law was very ingenious. Besides separating the notes issued for the State from the notes of the National Bank, it put the paper circulation within limits, which, while checking any abuse the banks might make of their power of private issue, were at the same time not iron-bound. And, by forcing the banks to redeem their notes either in specie or in notes of the *Consorzio*, it kept the private issue of notes on a par with those issued for the Government. In reality, the notes of the *Consorzio* alone now had a *forced* circulation, the notes of the separate banks being redeemable either in specie or in *Consorzio* notes, and so having a *legal* circulation only.

\* *Annuario Statistico Italiano*, 1878, Parte II., pp. 118-121.

The growth of the paper circulation during the period now under consideration is exhibited in the following table,\* the amount of both government and bank notes being shown: —

Year.	<i>For the State.</i>	<i>For the Banks.</i>	<i>Total.</i>
31 Dec., 1866	250.	945.9	495.9
1867	250.	487.0	737.0
1868	278.	563.1	841.1
1869	278.	570.7	848.7
1870	445.	497.4	942.4
1871	629.	577.5	1,206.6
1872	740.	623.4	1,363.4
1873	790.	664.3	1,454.3
1874	880.	632.2	1,513.2
1875	940.	621.2	1,561.3
1876	940.	646.0	1,586.0
1877	940.	628.6	1,568.6
1878	940.	672.3	1,612.3
1879	940.	732.4	1,672.4
30 Sept., 1880	940.	794.9	1,784.9

These figures disclose at once the effort made by the State to keep down its borrowing until 1870. From 1870-75 there is a sharp increase; and, from 1875 on, the amount stood at 940 mil. The circulation of the banks, on the other hand, following more closely the natural demand, shows a steady growth during 1867-69, although this increase is by no means as rapid as that of the State notes from 1870-75.

Two points are to be noticed in connection with the paper currency,— the premium on gold, and the course of the *rente* at home and abroad.

The premium on gold was a heavy burden for Italy. According to Magliani, Minister of Finance after 1876, Italy paid a discount,† owing to the depreciation of her paper money, on exports and imports of 10 per cent.; and this discount went up, at times, even to 16 and 17 per cent. Even as late as 1879, when the possibility of a speedy resumption of specie payments became strong enough to be felt in the markets, there is no sign of a falling premium on gold. As time goes on, however, between the maximum and minimum rates ‡ there is less difference, and the fluctuations are not so great: —

Year.	Average.	Maxim.	Minim.	Year.	Average.	Maxim.	Minim.
1 May, 1866	7.81	30.50	1.25	1 May, 1874	13.25	16.85	9.50
1867	7.57	13.40	4.87	1875	8.37	10.80	6.15
1868	9.82	15.15	5.20	1876	8.47	9.65	7.35
1869	3.94	5.72	2.02	1877	9.63	13.75	7.65
1870	4.20	12.10	1.72	1878	9.42	11.00	7.90
1871	5.35	7.30	3.85	1879	11.10	14.80	9.00
1872	8.66	14.25	6.70	30 Sept., 1880	10.53	13.05	8.75
1873	14.21	17.65	10.00				

\* *Measures Proposées*, pp. 18, 86.

† *Ibid.*, p. 14.

‡ *Ibid.*, p. 4.

The credit of the State, on the whole, beginning with 1868, steadily rose. We may see this by examining the price of the Italian 5 per cent. consolidated \* in Italy and in Paris, taking the average rate year by year, remembering that the Italian price is in paper and the French price in gold :—

<i>Year.</i>	<i>Italy.</i>	<i>Paris.</i>	<i>Year.</i>	<i>Italy.</i>	<i>Paris.</i>
Cal. y'r 1865	65.22	65.46	Cal. y'r 1873	70.75	63.03
1866	66.54	64.08	1874	70.00	65.24
1867	63.32	50.02	1875	75.11	71.61
1868	65.20	51.03	1876	75.49	71.60
1869	57.12	55.42	1877	75.03	70.43
1870	57.13	54.23	1878	78.79	73.94
1871	62.83	60.84	1879	85.60	78.09
1873	73.52	68.36	7 Oct., 1880	90.85	84.43

In the years covered by this table, a great change had come over the holding † of the Italian funds. In 1865, for instance, 33.8 per cent. of the consolidated 5 and 3 per cents., or 78 mil., were held by foreign creditors; in 1875, only 17 per cent., or 52 mil., were in foreign hands; and in 1879 only 19 per cent., or 63 mil., were held abroad. But, besides this, it will be noticed that after 1874 the 5 per cents. were higher in the French market than in 1865; and after 1876 the general upward movement becomes strong and firm.

It is evident that so long as the expenses exceeded the receipts, so long as continual recourse must be had to borrowing at home or abroad, so long the State could not permanently get rid of the forced currency. "The essential condition," declared Magliani,‡ "for putting an end to the *corso forzoso*, is that the budget should not only be in equilibrium, but show an excess of receipts." This equilibrium was not established until 1875. After that date, the receipts exceeded the expenditures, and definite steps could be taken towards resumption.

The budget § history from 1866 to 1880 falls naturally into three periods,—the first extending from 1866 to 1870, the second from 1871 to 1874, and the third from 1875 to 1879. We may say a word concerning each :—

		<i>Receipts.</i>	<i>Expenditures.</i>	<i>Deficits.</i>
(a)	1866	617.1	1,338.8	721.5
	1867	714.5	928.6	214.1
	1868	768.6	1,014.4	245.8
	1869	870.7	1,019.6	148.9
	1870	866.4	1,080.7	214.3

\* *Mesures Proposées*, p. 17.

‡ *Mesures Proposées*, p. 18.

† Sacha, *L'Italie*, pp. 486, 487.

§ *Annuario*, 1881, pp. 1055-68.

The first period was very gloomy, and during it Italy sank to perhaps the lowest level she was forced to touch. In these five years the aggregate deficit amounted to 1,550 mil. *Rente* averaged 55.46 at home and 52.96 in Paris, frequently falling to 45 and even lower; and such a price of course made an appeal to public credit impossible. Accordingly, the measures to combat the deficits fell directly on the people, and were necessarily severe. The most rigid economy was observed; every expense not absolutely necessary was refused; and a watchful saving was carried into even the *minutiae* of every department. While the outgo was thus held nearly at a minimum, the income was increased regularly from year to year. Various means were employed to this end. The State paper money went up in amount from 250 mil. in 1866 to 445 mil. in 1870. The suppression of the religious corporations and the liquidation of the ecclesiastical estates furnished a steady, though not over-large, income. But the real stress fell on the taxes, which, especially those on consumption, were either raised or extended in a very great degree. Some of the principal tax-yields\* were, in mil. of lire:—

<i>Years.</i>	<i>Manufactures.</i>	<i>Personality.</i>	<i>Grist-tax.</i>	<i>Successions.</i>	<i>Registrations.</i>	<i>Stampo.</i>	<i>Entrepôts.</i>	<sup>†</sup> <i>Tobacco.</i>	<i>Salt.</i>	<i>Customs.</i>
1866	39.13	28.25		11.42	26.06	18.31	4.77	85.51	56.18	64.83
1867	40.78	74.87		13.72	27.35	28.46	4.23	93.86	66.17	71.32
1868	40.40	2.22		12.87	26.46	26.61	4.56	94.87	72.17	72.77
1869	42.82	81.25	24.05	13.88	34.72	27.00	5.77	98.75	71.32	79.11
1870	44.34	64.89	30.10	17.96	34.45	27.60	5.80	99.39	72.66	72.87

In the face of the pressing needs, the grist-tax, by far the most unpopular tax that could be laid, was decreed in 1868; and, although its product fell far short of what was expected, yet the 24 mil. in 1869, and the 30 mil. it yielded in 1870, could not be spared by the State. All in all, the total tax-yield increased from 687 mil. in 1866 to 801 mil. in 1870.

	<i>Receipts.</i>	<i>Expenditures.</i>	<i>Deficit.</i>
(b)	1871	966.9	1,040.9
	1,014.0	1,097.6	83.6
	1,047.2	1,186.2	89.0
	1,077.1	1,090.5	13.4

\* *Measures Proposées*, p. 40.

† Sum of sales.

The second period makes a strong movement for the better. These were the years of great speculation,—a speculation which, in spite of its excess, seemed to breathe the breath of life into Italian credit and industry. The banks, for instance, carried up their loans from 464 mil. in 1870 to 846 mil. in 1874.\* The aggregate deficit for four years was only 260 mil.,—less than the deficit of any single year from 1860–66. Here, as before, one will notice that the expenditures, excepting the panic year 1873, rise but slightly, while the receipts increase steadily and rapidly. Some of the principal tax-yields again were, in mil. of lire:—

Year.	Manufactures.	Perfumery.	Grist-doz.	Successions.	Registration.	Stampes.	Railways.	Tobacco.	Salt.	Customs.
1871	48.94	72.08	43.91	20.32	38.99	30.95	6.71	104.96	74.03	81.40
1872	50.22	79.21	58.48	24.07	47.36	33.55	8.20	111.56	76.06	87.89
1873	68.02	90.37	64.35	22.15	49.12	34.51	6.04	116.61	76.31	96.71
1874	58.13	87.96	68.88	23.80	50.11	34.58	9.45	119.00	77.93	100.56

These figures, however, do not tell the whole truth. The circulation of the State paper went up in amount from 445 mil. at the end of 1870 to 880 mil. at the end of 1874,—in other words, almost doubled; and this increase of 485 mil. was of course only a disguised loan. An open appeal to the public credit, as a glance at the course of the *rente* shows, was quite out of the question. Still, this surreptitious borrowing was very objectionable, for it was subject to the ruinous discount of a depreciated paper currency.

		Receipts.	Expenditures.	Surplus.
(c)	1875	1,006.3	1,082.4	13.9
	1876	1,123.3	1,102.9	20.4
	1877	1,180.8	1,157.9	22.9
	1878	1,191.6	1,177.1	14.5
	1879	1,228.1	1,188.8	42.3

The third period marks the change from a deficit to a surplus. These five years show an aggregate surplus of 114 mil.; and, although the expenditures now began to force themselves up year by year, the receipts show a steady increase, which more than counterbalanced this growth. The credit of the State showed a marked improvement. *Rente*, which had

\* *Measures Proposées*, p. 53.

stood for the year 1874 at about 65 in Paris and at 70 in Italy, rose in 1879 to 79 in Paris and to 85.60 in Italy. Considerable improvements were entered upon. The need of more and better organized railways in particular was severely felt, for the old lines, utterly insufficient in themselves, had been laid down with an eye mainly to provincial needs, and were generally unfitted for national purposes. The State had been active since 1870 in building, but a still further scheme of construction was now entered upon. In 1876, the Left finally secured a sweeping majority in the Chamber; and after this we hear no more of ministerial weakness in the treatment of the finances because of insufficient or doubtful support. The Left came into power with free hands, and set itself earnestly to solve the two great problems,—the abolition of the grist-tax and the redemption of the forced currency. The latter was at this time impossible. Italy was not yet in a position to deal with so great a financial question as the transformation of the currency, and there was nothing but to wait and let affairs take their course. The task of doing away with the grist-tax, however, was entered upon in earnest; and the end of the period marks the first step towards the lifting of this most obnoxious burden. The leading tax-yields were, in mil. of lire:—

Year.	Manufactures.	Personality.	Grist-tax.	Successions.	Registration.	Stamps.	Railways.	Tobacco.	Salt.	Customs.
1875	55.95	93.09	76.64	27.14	51.65	38.70	15.19	129.23	75.28	104.13
1876	54.93	97.26	82.62	24.88	50.90	37.77	12.88	132.83	79.86	98.33
1877	55.80	98.19	83.14	27.37	57.17	39.06	13.09	141.62	80.65	100.63
1878	56.34	98.81	83.54	25.46	62.83	38.99	13.03	141.28	80.58	105.36
1879	61.45	98.78	75.48	25.49	62.85	39.65	13.53	146.32	80.24	130.92

Looking at the years 1866-79 as a whole, we see that, with the exception of the year 1878, the expenditures do not reach 1,100 mil. until 1876, and that in 1879 they are only 1,186 mil., as against 928 mil. in 1867. The receipts increased each year, 1870 excepted; and from 1867 to 1879 they show a rise from 714 mil. to 1,228 mil.

A more detailed examination of the budget is for our purpose unnecessary. The one fact of importance is that the

equilibrium was established and maintained, and this the figures above given abundantly demonstrate. But we will pause for a word of explanation concerning two features especially prominent in these years,—the treatment of the church estates, and the grist-tax, already mentioned.

Concerning the former, there is little to say, for its importance is rather political and social than financial. In 1862, as we have seen, a law\* was passed by which all those church estates that had passed to the public domain by virtue of earlier laws were to be sold. At this time, the State still recognized those religious corporations and orders which had for their aim either education or the care of the sick. This recognition was now taken away. By the law† of the 7th of July, 1866, all religious corporations and orders‡ were suppressed. Their patrimonies passed to the State; and, in return, an amount of *rente*, equal to their annual revenue less the tax on mortmain and 5 per cent. for administration, was set apart in the form of a Fund for Worship, out of the income of which were to be paid pensions to the members of the suppressed orders, and the budget expenses for Catholic worship. This law reduced all monks and nuns to the condition of ordinary citizenship. In the following year, by the law§ of the 15th of August, 1867, the suppression was carried still further, and the liquidation of the church estates entered upon *in extenso*. The State now refused to recognize any institutions—abbeys, priories, chapters, or the like—which, under any title or name, were generally qualified for the purpose of worship. All the church estates, whether they had fallen under previous laws or not, were to be subject to an extraordinary tax of 600 mil.,—an amount equal to one-third of their estimated value,—which was to be levied in part on

\* *Annali di Statistica*, Serie 2a, vol. iv. 1879. Notizie, Storiche, e Statistiche sul Riordinamento dell' Asse Ecclesiastico nel Regno d' Italia, pp. 16-44. Cf. also *Legge sull' Amministrazione del Patrimonio dello Stato, e sulla Contabilità Generale*, annotata dall' avvocato A. de Cutio. Torino, 1883. (See index.)

† *Ibid.*, p. 44 *et seq.*

‡ *Italy, Present and Future*, A. Galeyna, London, 1887, vol. i. p. 252: "In 1865, . . . the Italian Kingdom still harbored within its boundaries 2,383 religious houses,—1,506 for men, 876 for women,—with 26,991 inmates, 14,907 monks and 14,084 nuns."

§ *Annali di Statistica*, p. 53 *et seq.*

the *rente* set apart for the Fund for Worship, and, for the rest, on the value of the estates themselves. This meant, practically, the confiscation by the State of one-third of the value of the church estates. For the remaining two-thirds, the State made over in favor of the owners an amount of *rente* equal to their annual income, under the same deductions as before; and the property fell to the government. Somewhat elaborate arrangements were made to facilitate the sale of the estates, but in spite of all efforts this necessarily proceeded slowly.

These laws form the gist of all the legislation in regard to the church estates. By their application, the government managed to squeeze a considerable sum of money\* out of the Church. From the law of August 15, 1867, a sum of 579.4 mil. was secured; from the law of August 10, 1862, for Sicily, 117.4 mil.; and from other laws, 76.4 mil.: in all, a nominal sum of 773.2 mil. was obtained. In fact, the yield was considerably less than this; for numerous deductions from the selling prices had to be made, so that on the whole, the results were not of great importance.† The buildings, which answered well for convents and monasteries, were of little use for anything else: neither as schools nor as barracks nor as hospitals were they of much service. This is no place to enter into a discussion as to the ethics of the conversion of the church estates. The State needed money, and the conversion of the estates to its use undoubtedly afforded valuable aid. But, whatever the means by which the Church had acquired this property or whatever the influence of the Church itself, it can hardly be denied that the story of the treatment of the *asse ecclesiastica* is a somewhat shameful one for Italy.‡

The grist-tax (*macinato*) was first laid in 1868. For several years, successive ministers had been asking for it,—Sella in 1865, Ferrara in 1867; but it was felt on every hand to be so objectionable because of its intense unpopularity, touching, as it did, the very bread that went into people's mouths, that the Chamber would not grant it. Still, every one believed that it would yield a large income; and gradually this came to

\* *Annuario*, 1884, pp. 126, 127.

† Cucheval-Clarigny, *Les Finances de l'Italie*, pp. 4, 5.

‡ *Ibid.*, pp. 18-37; Sacha, *L'Italie*, pp. 387-388; *Annuario*, 1884, Table VII.

be the decisive point. The opposition to it weakened in the face of the steady deficits and the depreciation of the *rente*, and finally, by a law of the seventh of July, 1868, the Chamber consented to its imposition. A charge of 2 lire per quintal was laid on wheat, of 1 lira on maize and rye, of 1.20 lire on oats, and of  $\frac{1}{2}$  lira on other cereals. The mills were divided into four classes, according to the amount of production; and every miller paid a tax regulated, under conditions, by the number of turns of the mill-stone, to which a mechanical counter was affixed. The yield of the tax proved, however, a great disappointment. Instead of the 80 or 90 mil. anticipated, the tax produced in 1869 only 24 mil. and in 1870 but 30 mil.; and not until 1876 did the yield equal the estimated amount. On June 16, 1874, a further law was passed, by which certain reforms were introduced to bring about a greater exactness in measuring the production, and the tariff itself was somewhat altered. The tax on wheat was left at 2 lire per quintal; but that on the inferior cereals—oats, maize, rye, and barley alike—was put at 1 lira per quintal. After 1876, when the Left obtained their majority in the Chamber, vigorous efforts were directed towards abolishing the tax. The Sicilian deputies made the question a direct issue with the government. The Neapolitan provinces, which had paid but 6 fr. per head of taxation under the Bourbons, and had had their taxes more than sextupled under the new kingdom, put the grist-tax among their greatest grievances. At length, on the seventh of July, 1878, the Chamber decreed that the abolition of the tax should begin on the first of July, 1879. The tariff on corn was lowered one-fourth (from 2 lire to  $1\frac{1}{2}$  lire), and the tax on inferior cereals was entirely done away; and the date for the total cessation of the tax was fixed for the first of January, 1883. The Senate, however, demurred. A strong feeling was shown against throwing away 80 mil., without any assurance of an equal revenue in its place; but, after some debate, the abolition of the tax on inferior cereals was acquiesced in, while the project for lowering the tax on wheat was refused, and the restriction of time within which the tax must cease entirely was removed. The upshot was that the tax on wheat was left unaltered, and that on inferior cereals repealed. This was a change almost

for the worse instead of the better, for it was singularly unfair. Venetia, for instance, consumed 2.07 quintals per head of inferior cereals and only 0.53 quintals of wheat, while Sicily consumed 1.78 quintals per head of wheat and only 0.02 quintals of inferior cereals. The subject was immediately taken up again. The Minister of Finance, Magliani, showed that, owing to the fact that the budgets now yielded a normal surplus, by means of further taxation — notably on tobacco, sugar, coffee, and spirits — the repeal of the tax was both possible and desirable. And by a law \* promulgated on the nineteenth of July, 1880, it was finally decreed that on the first of September, 1880, the tax on wheat should be reduced to 1.50 lire per quintal, and after the first of January, 1884, should entirely cease.

The general economic condition of Italy in the years 1866–80 showed a steady gain. Credit was expanding, industry was rapidly developing, and even while the State finances were in their worst confusion there seems to have been a strong growth of production, and in trade of every kind.

In her special commerce, as we have seen, Italy exported in 1865 to the value of 558 mil., and imported to the value of 965 mil. In 1879, the exports had grown to 1,101 mil., and the imports to 1,262 mil. There was still a balance of trade against Italy, but the relation of exports and imports had greatly changed. The value of the exports in 1865 was only 56 per cent. of that of the imports; in 1879, it was 87 per cent. The exports had nearly doubled in value, making a gain of 97 per cent., while the imports had gained but 30 per cent. We may compare this result with the fact that from 1867 to 1879 the foreign trade of France increased only 32 per cent. and that of England 20 per cent. The results of the special commerce † were, in millions of lire:—

Year.	Imports.	Exports.	Difference.	Year.	Imports.	Exports.	Difference.
1865	965	558	—407	1873	1,273	1,162	—111
1866	970	618	—352	1874	1,275	985	—290
1867	986	740	—246	1875	1,215	1,034	—182
1868	996	787	—209	1876	1,327	1,217	—110
1869	937	792	—145	1877	1,150	903	—248
1870	996	756	—239	1878	1,070	1,045	—25
1871	964	1,085	+123	1879	1,262	1,101	—161
1872	1,186	1,167	—19	(to Sept.) 1880	907	834	—73

\* *Annuario, 1881*, p. 169 (Amministrazione).

† *Measures Proposées*, p. 26.

We may put this in another way.\* In 1866, the amount per head (reckoned in gold) of imports was 35.52 lire; in 1874, 41.64 lire; and, in 1879, 40.22 lire. The amount per head of exports was: in 1866, 25.20 lire; in 1874, 32.18 lire; and, in 1879, 35.06 lire. Or the average per head of imports in the years 1865-67 was 36.97 lire, and in 1878-80 was 37.71 lire; while the average of exports was in the former period 25.74 lire, and in the latter 34.69 lire.

In manufactures,† if we consider how backward was Italy's condition, the growth was strong and noticeably steady. The silk industry has always been one of her most important pursuits. From 1860-65, the silk industry was so miserably depressed that revival seemed almost hopeless. A start was made, however; and, beginning with 1870, the progress was rapid. In 1880, there were more than two million spindles at work; and it is estimated that from 1870-80 Italy more than doubled her workers.‡ The competition of Asiatic silks, too, had pushed the spinning and weaving to great perfection. Cotton spinning had likewise made a great advance. In 1865, the industry was almost at a standstill. There were scarcely 30,000 spindles at work, and these in a poor condition; and but one print factory was in existence. In 1880, over a million good spindles were at work, together with 70,000 hand-looms and 15,000 power looms, and the number of print factories had increased to four. The importation of cotton yarn fell in the three years 1877-79 from 136,000 quintals to 65,000 quintals. In the construction of machines and of apparatus of all sorts, there were employed in 1872 about 26 mil. lire and 12,000 men; but in 1880 these figures had risen to 36 mil. lire, and more than 15,000 workmen. Indeed, there was scarcely a branch of industry to be found—excepting, perhaps, the wool industry—that did not show a similar

\* *Atti Parlamentari*, 1881, p. 351. Speech by Luzzati.

† Vide *Mesures Proposées*, pp. 47-51; *La Statistica di Alcune Industrie Italiane*, estratto dall'*Archivio di Statistica*, Anno IV., Rome, 1879, vide index; *Annuario Statistico Italiano*, 1878, p. 120 et seq.; *Saggio sul Commercio Esterno, terrestre e marittimo, del Regno d' Italia negli anni 1862-63*, Firenze, 1865, pp. 261-267; Sachs, *L'Italie*, pp. 832-837, etc., etc.

‡ *Journal des Économistes*, March, 1884, p. 373. The number increased from 14,000 to 30,000.

advance. The most diverse branches bore witness to this. Paper-making had grown so that 80,000 quintals were exported yearly; sugar-refining, though a new industry, promised to supply the needs of the country soon; and the distillation of spirits already provided for two-thirds the home consumption.

It is to agriculture,\* however, that we must look to see the most unequivocal signs of progress in Italy. In spite of a rapid increase of population,† Italy was able to import 119,000 tons of cereals less between 1875-79 than between 1861-65. This was due in part to the great improvement of agriculture, especially in the north, but in part also to the fact that a great mass of unproductive lands which had been lying idle had become productive, owing to the policy of the government of granting the land to those who were able to cultivate it. The exportation of cattle had largely increased. In the period 1860-65, the exports exceeded the imports on the average by 2 mil. lire; while, during 1875-79, this average excess was 48 mil. lire. The export of meat and poultry rose from 4,481 quintals yearly in 1860-65 to 56,524 quintals in 1875-79; and that of eggs from 19,814 quintals to 231,857. The average export of hemp in 1860-65 was 185,000 quintals; in 1875-79, it rose to 346,000 quintals. The export of garden products rose from a bare 14,000 quintals per year during 1860-64 to 99,851 quintals during 1875-79; and, in the first nine months of 1880, it reached 143,911 quintals. In South Italy, not only the quantity rose, but also the quality, of the two great products, oil and wine. The average export of oil from 1860-64 did not reach 341,000 quintals; from 1875-79, the export reached 748,000 quintals. From 1860-65, the importation of wine about equalled the export, the imports averaging 250,000 hectolitres, and the exports 293,000. In 1879, the import did not reach 30,000 hectolitres, and the export amounted to 1,063,000. The export of fruit from 1860-64 averaged 370,000 quintals, and from 1875-79 it reached 974,000 quintals. Fruit culture occupied four or five times as much ground as twenty years before, and such land had risen enor-

\* *Mesures Proposées*, pp. 44-47; Sachs, *L'Italie*, pp. 888-898.

† Sachs, *L'Italie*, p. 931. Population in 1861, 21.8 mil.; in 1879, 28.4 mil.

mously in value. Around Sorrento, the price was about 24,000 lire per hectare.

This progress receives a striking verification in many ways. For instance, the savings of the country quadrupled in fifteen years. Such a rise, marvellous in itself, is still more marvellous when we reflect how busy during a part of this period industrial life had been, and how great the demand for investment, and the amount put into fixed capital. The savings\* were, in millions of lire:—

Year.	Amount.	Year.	Amount.	Year.	Amount.	Year.	Amount.
1865	224.9	1869	299.5	1873	476.0	1877	700.1
1866	224.7	1870	382.6	1874	522.9	1878	767.9
1867	237.1	1871	407.7	1875	559.6	1879	859.8
1868	276.5	1872	465.4	1876	629.5	June, 1880	891.3

Again, the loans of the banks † increased with great rapidity. For three of the six banks of emission they were, in millions of lire:—

Year.	Amount.	Year.	Amount.	Year.	Amount.
Dec., 1866	212.1	1871	333.2	1876	592.9
1867	239.5	1872	433.7	1877	588.3
1868	232.6	1873	482.2	1878	501.5
1869	303.7	1874	440.8	1879	477.1
1870	266.9	1875	388.2	Sept., 1880	491.3

If we put out of account the abnormal development of the years 1872-74, the growth becomes evident, the total amount having doubled between 1866 and 1880. In reality, the increase was even greater. For, if we now take resources of the same nature,‡ furnished not only by the six great banks, but also by the ordinary banks of discount and deposit, by the people's banks, the savings-banks, and all other institutions of credit, we find that the amount doubled in ten years.

Year.	Amount.	Year.	Amount.
1870	464.5	1876	830.4
1871	566.1	1877	831.1
1872	821.5	1878	846.7
1873	968.3	1879	950.9
1874	946.4	June, 1880	977.1
1875	815.1		

\* *Mesures Proposées*, p. 55. The savings in the savings-banks for an earlier period than that we treat are very interesting. They are (*Annuario Statistico Italiano*, 1878, Parte II., p. 108):—

Year.	Amount.	Year.	Amount.	Year.	Amount.
1825	2.7 mil.	1840	18.9 mil.	1855	94.4 mil.
1830	4.8 "	1845	38.6 "	1860	157.2 "
1835	9.0 "	1850	40.0 "	1865	224.9 "

† *Ibid.*, p. 52.

‡ *Ibid.*, p. 53.

But the final proof of Italy's progress is to be found in the better condition of the laboring classes. Wages generally increase in a smaller degree and after everything else; and increase in them, therefore, through a series of years is a strong evidence of vigor and prosperity. Wages increased steadily and considerably in Italy from 1865 to 1879, and this increase was real; for the price of the various articles of food and clothing entering into the laborer's consumption did not increase with equal rapidity.\* Taking the year 1862 as the standard, and representing it by 100, the following figures show the progression from year to year:—

Year.	Wages upon the Public Works.	Wages in the Textile In- dustries.	Average of the two.	Year.	Wages upon the Public Works.	Wages in the Textile In- dustries.	Average of the two.
1865	107.02	107.37	107.30	1873	126.69	131.25	129.93
1866	108.39	109.54	109.06	1874	115.30	126.99	123.55
1867	110.48	111.63	111.59	1875	116.75	142.08	136.59
1868	112.76	113.41	113.97	1876	118.05	142.57	137.55
1869	113.41	114.98	114.65	1877	118.38	144.39	139.07
1870	117.15	118.68	117.87	1878	118.89	144.08	138.92
1871	121.50	120.60	120.79	1879	113.32	136.85	124.94
1872	124.06	125.57	125.23				

Especially noticeable and significant is the rise of wages of those employed in textile industries. The year 1879 was unfortunate, and wages suffered in consequence; but, taking the year 1878 for comparison, there is an absolute gain of a third. Curiously, the wages of these manufacturing hands do not show the results of the panic years 1873-74, but increase as steadily as before. This is to be accounted for on the ground that the manufacturing establishments† had been growing in a normal way. So great a need for them existed that any growth was welcome and normal.

\* *Messires Proposites*, p. 52.

† *Ibid.*, pp. 83-85. The inferiority of the Italians to the workmen of other countries is striking. "Take, for instance, a cotton-spinning mill, working 20,000 spindles. An English factory of this size requires the services of 180 men, an Italian factory 300 men; the English factory will turn out 30 kilograms per spindle, and the Italian 25 kilograms; the cost of plant will be in England 800,000 lire, in Italy 1,200,000 lire; the general expenses of the former will amount to 80,000 lire, in the latter to 144,000 lire." The total sums paid in wages will be about equal in each.

*b. THE RESUMPTION.*

Enough has been said, it is hoped, to show clearly how different was the Italy of 1880 from that of 1866 and the years preceding. Much more might be said which for lack of space must be left unsaid. Still, the progress is evident. Was Italy, however, ready for the transformation of the currency? It was obvious that, even if a specie basis were obtained for a time, a steady drain of coin would necessitate a return to paper money. Would such a drain occur? If gold or silver were brought into the country, would they remain there, or would they go back again across the borders?

Beyond doubt, Italy was advancing economically. Perhaps the tax-yields show best the state of the national wealth, and these\* were 989 mil. in 1879 as against 474 mil. in 1866. The deposits in the savings-banks had increased from 225 mil. in 1865 to 679 mil. in 1880. The deposits and running accounts,† with or without interest, held in banks of emission, people's banks, and institutions of credit, were rapidly rising; and, besides this, a large amount of money had been invested in improvements of all sorts, and become fixed capital. In the matter of the budgets, the State, as we have seen, was on a sound basis. After 1875, the government receipts had exceeded the expenditures. Instead of any necessity for further borrowing, an opportunity was therefore offered to lighten the load of debt that had been growing so many years.

One doubt remained. Ever since 1865, according to the customs-reports, Italy had bought more than she had sold. If this state of things continued, it was urged, the gold could not remain in Italy. The objection was quickly answered. It was plain, in the first place, leaving aside the fact that the foreign commerce of a country does not represent the sum total of its dealings with other countries, that the customs-reports were inaccurate. The customs-valuation was a mere approximation, since the declarations of those interested in the

\* *Annuario, 1884*, pp. 1054, 1055.

† *Measures Proposées*, p. 57: —

1875	678.2	mil.	1878	739.3	mil.
1876	628.9		1879	731.3	
1877	654.4		1880 (June)	677.3	

trade had to be made the ground of computation. Again, the valuation was based on laws changed only at considerable intervals. But evidently a producer, by increased skill or by producing greater quantities, can largely reduce the price of an article without lowering the profits, so that it was entirely possible that the customs-valuation should be much greater than the real value. This reasoning explained away in part the problem offered by the foreign trade. The final and decisive argument was that based on the growth of the exports and imports themselves. Beginning with 965 mil. in 1865, as we have seen, the imports touched a maximum of 1327 mil. in 1876, and then fell steadily away. Even in 1879, a particularly bad year for Italy and one in which the importation was very considerable, the imports fell to 1262 mil., or 65 mil. less than in 1876. The exports, on the contrary, beginning with 558 mil. in 1865, rose to 1216 mil. in 1876, and then fell to 1100 mil. in 1879. That is to say, while the exports nearly doubled in value in these fifteen years, the imports increased only about 30 per cent. Considering, therefore, the immense growth of the exports and the comparatively small balance of trade against Italy, together with the undoubtedly lack of accuracy in the customs-reports, there seemed little reason for arguing from the customs-returns that Italy would not hold her own in keeping the gold.

In a word, then, the country had shown its ability to preserve an equilibrium in the budgets; the foreign trade was satisfactory, and growing more and more to the advantage of Italy; and industry and commerce were thriving. There seemed, therefore, no valid reason why Italy should not make an effort to do away with the forced currency. The main question was how to get the gold and silver.

Before proceeding to answer this, however, let us first consider how much specie Italy at this time possessed. The Minister of Finance, Magliani, estimated the complete total\* of specie held in the country on September 30, 1880, to be, in millions of lire:—

	<i>Gold.</i>	<i>Silver.</i>	<i>Alloyed silver.</i>	<i>Bronze.</i>	<i>Total.</i>
In treasury and banks,	101.	44.	59.	2.	206.
In private hands,	108.	127.	5.	73.	313.
Total, . . . .	209.	171.	64.	75.	519.

\* *Measures Proposées*, p. 99.

The amount in the treasury and banks\* was divided as follows:—

	<i>Gold.</i>	<i>Silver.</i>	<i>Bronze.</i>	<i>Total.</i>
Treasury, . . . . .	33.94	37.06	1.35	72.35
Banks, . . . . .	67.45	64.87	0.60	133.09
Total, . . . . .	101.40	102.43	2.04	205.97

That held by the banks† again may be further reduced to the portions held by the different institutions:—

	<i>Gold.</i>	<i>Silver.</i>	<i>Alloyed silver.</i>	<i>Bronze.</i>	<i>Total.</i>
National Bank of the Kingdom, . . . . .	26.03	21.34	32.19	0.31	80.77
Bank of Naples, . . . . .	16.11	3.11	0.81	0.01	20.04
National Bank of Tuscany, . . . . .	3.46	0.26	....	0.17	3.89
Roman Bank, . . . . .	6.93	3.07	....	0.20	10.20
Bank of Sicily, . . . . .	9.05	3.23	0.85	....	13.11
Tuscan Bank of Credit, . . . . .	5.00	....	....	....	5.00
Total, . . . . .	67.45	31.01	33.85	0.69	133.01

The coin‡ held in private hands was of two sorts. The one, about 140 mil. of old money still out in the central and southern provinces, consisting of Papal and Bourbon coins, was estimated at  $\frac{1}{2}$  silver and  $\frac{1}{2}$  gold. The other, calculated at about 100 mil., and used in commerce, was estimated at  $\frac{1}{2}$  gold and  $\frac{1}{2}$  silver. Together, these two sums may be stated approximately to be composed, as above, of 108 mil. in gold, 127 mil. in silver, and 5 mil. in alloyed silver.

A word of explanation in regard to the silver coinage is still needed. From 1862-68, Italy coined§ in fractional silver (.835 fine):—

<i>Denomination.</i>	<i>Value.</i>
2 lire.	30 mil.
1 "	51. "
0.50 "	63. "
0.20 "	7. "
Total, . . . . .	156 mil.

When the forced currency was declared, this money almost entirely left the country, and found its way into the other States of the Latin Union, where, according to the Monetary Convention of 1865, it had a legal course. A small remainder went into the coffers of the State and of the banks. When the Italian government began to think of resumption, it naturally desired the return of its silver. Accordingly, by the

\* *Measures Proposées*, p. 90.

† *Ibid.*, p. 91.

‡ *Ibid.*, pp. 95, 96.

§ *Ibid.*, pp. 91-96. *Vide also Moneta e Corso Forzoso*, by C. F. Ferraris, Milan, 1879.

convention\* of November 5, 1878, modified by that † of June 20, 1879, the other States of the Latin Union entered into agreement not to accept this money as legal payment after January 1, 1880, and to refrain from accepting it until the cessation of the forced currency. The silver would be retired from circulation by them and forwarded to the French Government, from whom Italy, on her part, agreed to purchase it to the amount of 100 mil., paying therefor, either in gold or in silver 5-franc pieces. The dates at which France should send the money to Italy were arranged for: 18 mil. on January 1, 1880; 17 mil. on December 31, 1880; and the remainder in three equal instalments payable at the end of 1881, 1882, and 1883. These latter payments, however, could be anticipated at a discount. By the same convention, Italy, owing to the increase of her population, was permitted to raise the total amount of this coinage from the 156 mil., as agreed in the convention of 1865, to 170 mil. The amount in circulation in the other States proved less than was supposed, for the French government received in all but 79 mil. The condition of this silver circulation,‡ then, on September 30, 1880, was:—

a. In the Treasury, . . . . .	25.01 mil.
b. In banks:	
1. Temporary State deposits, . . . . .	26.91
2. Property of banks, . . . . .	10.70    37.61
c. Sum due from France, December 31, 1880, . . . . .	16.94
d. Sum due from France in next three years, . . . . .	49.09
Total, . . . . .	125.66
e. Adding the increased issue authorized as above, . . . . .	14.00
Total, . . . . .	142.66

Turning now to the paper money, the total amount of the paper circulation on the 30th of September, 1880, was 1,664.9 mil., of which 940 mil. was in *Consorzio* notes. The remainder, 724.9 mil., had been issued by the banks, and was divided § as follows:—

National Bank of Kingdom, . . . . .	448.83 mil.
Bank of Naples, . . . . .	142.75
National Bank of Tuscany, . . . . .	46.55
Roman Bank, . . . . .	43.86
Bank of Sicily, . . . . .	29.05
Tuscan Credit Bank, . . . . .	13.89
Total, . . . . .	724.96

\* *Bullettino Ufficiale*, 1883, pp. 296-303.

† *Ibid.*, pp. 303-309.

‡ *Measures Proposées*, p. 94.

§ *Ibid.*, p. 88.

The amount of paper divided according to denomination\* was : —

<i>Denomination.</i>	<i>Consorzio Notes.</i>	<i>Bank Notes.</i>	<i>Total.</i>
Cent. 50	11.1 mil.	0.3 mil.	11.4 mil.
Lire 1	39.0	0.2	39.1
2	63.7	0.05	63.7
5	261.9	0.2	262.1
10	243.5	0.1	243.6+
20	50.3	0.5	50.8
25		0.8	0.8+
40		0.1	0.1
50		123.7	123.7
100	60.0	195.1	255.1
200		27.0	27.0
250	86.4	0.1	86.5
500		241.1	241.1
1,000	194.1	129.6	313.7
Total,	940.0	724.9	1,664.9

In fine, the entire circulation, both specie and paper, consisted of specie, 519 mil., and paper, 1,665 mil., making a total of 2,200 mil. lire.

On the 15th of November, 1880, the minister, Magliani, presented to the Chamber, together with his searching report on the condition of Italy, a bill † for the removal of the forced currency. The bill was founded on the idea of preserving the actual condition of the Italian market by making no change in the amount of currency in use. First of all, the *Consorzio* was to be abolished, and the notes of the *Consorzio* assumed as a direct debt of the State. Magliani then proposed, in brief, to contract a loan of 644 mil., of which 400 mil. should be in gold and 244 mil. in silver. This sum, he estimated, could be realized, without disturbance, in 5 per cents. at about 86 plus 1 per cent. for commission, transportation, and expense of negotiation. Of this 644 mil., 44 mil. in gold were to be at once paid to the National Bank, to extinguish an interest-bearing loan made by it to the treasury. The 600 mil. remaining would then be equivalent to two-thirds of the government paper in circulation, and would gradually replace 600 mil. of this. By this plan, the metallic circulation was raised to about 1,200 mil. and the paper reduced to about 1,000 mil. Provision was further made for putting the circulation of the banks on a sounder basis. The National Bank, on September 30, 1880, had in circulation 449

\* *Measures Proposées*, p. 88.

† *Ibid.*, pp. 145-150.

mil. in paper. By the receipt of 44 mil. in gold from the State, and by drawing on the reserves at its disposal for 22 mil. more, the minister calculated that its paper circulation could be reduced from 449 mil. to 388 mil., reducing the total amount of notes issued by all six banks of emission to 660 mil. The legal circulation of the notes of these six banks, which, having been prolonged from year to year, was to cease on December 31, 1881, would be extended to the 31st of December, 1883, at which time, it was hoped, the resumption would be begun, and would then cease. The method of redemption would be as follows: The smaller legal tender notes,—those of 50c., 1, 2, and 5 lire,—which had been put out to the amount of 315 mil., were first to be retired; then notes of the denominations 100, 250, and 1,000 lire would be withdrawn. Since, however, the sum of these latter notes in circulation amounted to 380 mil., there would not be enough specie to retire them all. Consequently, after the loan was exhausted, 46 mil. of them would remain outstanding; but, as it was probable that some of the small notes would not be sent in for redemption, a part of the specie set apart for redeeming them would therefore be available for the redemption of the larger notes. The total amount of State notes in circulation after the proposed operation was concluded would be: in 10 lire notes, 248.5 mil.; in 20 lire notes, 50.5 mil.; in 100, 250, and 1,000 lire notes, 46 mil.,—in all, 340 mil. lire.

At 5 per cent., the loan would necessitate an annual interest payment of about 34 mil. Evidently, if the government could be sure of a surplus of 42 mil., as in 1879, the loan could be undertaken without difficulty. But, unfortunately, no such surplus could be relied on. In 1878, for instance, the surplus had been only 14 mil. The sum, however, was easily procurable. Magliani proposed to raise it in part by the abolition of the *corso forzoso* itself. The Italian Government, as we have seen, suffered like any citizen from the weight of a gold premium, since it had itself to make payments in gold. The abolition of the forced currency and the resumption of specie payments would, of course, do away with this expense. To this saving — at least 12 mil.— could be added 3½ mil. which

had been paid the *Consorzio* for the fabrication and renewal of the paper money. Here, then, was 15 mil. The minister now proposed a regulation of the pensions, by which certain considerable life annuities for civil and military service were to be transferred into consolidated debt; and from this an immediate saving of 19 mil. was expected. The State, it is true, would lose by this the advantage of a gradual diminution of the charge by the extinction of lives, but it would make a present annual saving; and this was the point desired. In this way, the necessary 34 mil. was secured. Granting that these estimates were too large, and that they ought to be cut down to a much smaller figure, it must be remembered that the surplus of the budget has not been reckoned in, which would more than make good any deficiency.

After the bill had gone through the hands of a committee, its provisions were warmly discussed\* in the Chamber. It was contended that, while the financial and economic conditions of the country and the prospects of a general peace might seem to render desirable the abolition of the forced currency, yet the former had been disproved, and the latter was a hope rather than a belief. Further, the transformation of the pension money into consolidated debt served merely to postpone a payment; and, since interest on this sum must be paid, the country gained nothing. Then it was feared that a further issue of *rents* might depreciate that already issued, and that a moment of panic, as in 1866, might serve to bring the *rents* all back again into Italy. Finally, it was urged that, instead of redeeming only two-thirds of its notes in circulation, the Government ought to make the operation a complete one. These and other objections were brought up against the bill; but, though urged with vigor, they had little effect. The bill, as modified by the committee, finally passed the Chamber by the overwhelming vote of 266 to 27, and, receiving no modification in the Senate, was promulgated on April 7, 1881.

The bill, as it became a law,† differed somewhat in detail

\* *Atti Parlamentari*, first session, 1881. A good though brief summary of the debates is given in *Parl. Doc.*, xcix., 1881, Sir A. Paget's correspondence; also, in Sachs, *L'Italia*, pp. 631-644. Vide *Provvedimenti per l'Abolizione del Corso Forzoso: Discorsi del Ministro della Finanza*, pronunciati alla Camera dei Deputati, 16 e 15 Febbraio, 1881, Roma, 1881.

† *Bullettino Ufficiale*, 1883, pp. 25-33.

from its original draft. Upon the dissolution of the *Consorzio*, all *Consorzio* notes of a denomination under 5 lire and over 10 lire, and 105.4 mil. in 5 lire notes, were to be redeemed in coin and destroyed. The 10 lire notes and the remainder of the 5 lire notes, within five years from the date of the withdrawal of the other notes, were themselves to be withdrawn and destroyed, and their place taken by State notes in regular form, convertible into gold. For the present, their value was to be secured by a deposit of *rente*; but the annual surplus of the treasury, available for the extinction of its debts, was to be devoted to the diminution of the State debt represented by them. The Government was directed, as before, to pay 44 mil. in gold to the National Bank at least three months before resumption began. The legal circulation of the notes of the banks of emission was prolonged to December 31, 1883, although, even after this date, the Government was authorized to receive them. During the period of their legal circulation, however, the Government retained the power to regulate the rate of exchange between the six banks of emission and between the banks and the treasury; but the regulation forbidding a change in the rate of discount without the permission of the Government was to cease the day resumption began. It was further decreed that the reserves of the banks of emission should be composed entirely of metallic money having a legal course in the kingdom, and that these reserves could not be alienated or converted into silver, and that the notes of the banks must be payable either in coin or in State notes. Finally, the Government was authorized, by redeeming the small paper notes, to put into circulation the subsidiary silver money, and such other decimal money in gold or silver as it might possess.

The operation of the loan was immediately begun. The contract\* was signed for the Government by the Minister of Finance and for the contracting parties by the National Bank, in its own name and in that of Baring Brothers & Co. and C. J. Hambro & Sons, of London, of the Discount Bank of Paris, and of the Italian *Credito Mobiliare*, representing a syndicate of Italian banks. The nominal capital† on which the loan

\* *Prestita di 644 Milioni*: Relazione presentata dal Ministro delle Finanze Interno del Tesoro, O. Magliani, nella tornata dell' 8 Aprile, 1883, p. 5.

† *Ibid.*, p. 6.

was based, in 5 per cents., at a fixed price of 88.25, was 729,745,000 lire, which, if the loan proved successful, would yield the 644 mil. desired. The contract\* provided for 444 mil. in gold and 200 mil. in silver, and the time within which these sums should be paid to the treasury was fixed at not later than September 30, 1882. The *rente* for the loan was to be delivered in Paris with interest from January 1, 1882, at the rate of a little less than 5 per cent. (4.988), at 87.17. The fixed price, as has been said, was 88.25 at 5 per cent.; but the Italian tax on *rente* reduced this to the stated figures.† Owing to the difficult state of the markets,‡ — the Tunisian and Egyptian crises, the Paris crisis, and the American demand for gold,— the original contract for the loan was modified, and the time extended to February 15, 1883. In return for this concession, the banks agreed to furnish 47 mil. more in gold than had been stipulated, thus raising the total amount of gold to 491 mil.

On January 31, 1883, the accounts between the contracting parties were closed. The loan had proved successful, and the 644 mil. had been paid. Of this amount, 44 mil. had been paid to the National Bank as provided, by a mere transfer of accounts; and the 600 mil. remaining had been either remitted to the treasury in metal, or comprised in payments made against Italian liabilities abroad on the half-yearly payments on the public debt, or on the payments (14 mil.) due on the share of Italy in the St. Gothard tunnel. The operation had been conducted with great secrecy,§ in order not to alarm

\* *Prestito di 644 Milioni*, p. 6.

† "The price at which it should be issued was fixed by agreement at 88.25 for 5 lire of *rente*, from which had to be deducted interest accruing in the quarter between January 1, 1882, when interest began to run, and March 31, the mean date of payment by subscribers. This, after the tax on personal property, netted 1.08 lire for every five of *rente*, reducing the real price of issue to 87.17, which is within the limit prescribed by the law, since it corresponds to an annual interest slightly under 5 per cent. (4.988)." *Relazioni delle Commissioni Permanenti, sui Procedimenti per l'Abolizione del Corso Forzoso*, June 17, 1882, p. 43.

‡ *Prestito di 644 Milioni*, p. 7.

§ *Economist*, December 10, 1881. "Sometimes the influence of the operation appears in the fact that gold on the way from Australia to an English port is intercepted on its passage. Sometimes a report comes that a supply has been drawn from an out-of-the-way foreign bank, where the existence even of any stock on a comparatively large scale had scarcely been imagined. . . . The present operation is one in which the natural current is turned and made to run in a direction opposed to that which it would usually follow."

the markets, and, as a matter of fact, was scarcely felt. An analysis of the sums in coin delivered to the treasury shows that nearly every civilized country was laid under contribution for gold.\*

France	supplied	66.7 mil.	Russia	supplied	25.2 mil.
America		65.8	Australia		10.
Germany		65.5	Denmark		5.5
England		59.2	Switzerland		.2
Italy		58.4	Belgium		2.3
Austria		38.5	Spain		.6
			Total,		397.9

The silver taken, as was natural, was less evenly divided. France furnished 80.5 mil.; Switzerland, 4.5 mil.; Belgium, 0.7 mil.; and Italy some 29,000 lire,—in all, 85.8 mil. in silver. In addition to the coin, 116 mil. on credit,† as we have said, was also furnished. This credit was reckoned as  $\frac{1}{2}$  gold, or 45.8 mil., and  $\frac{3}{4}$  silver, or 70.2 mil.‡ Beginning with July, 1881, the payments were made as follows:—

	Gold.	Silver.
To December 31, 1881,	150.5 mil.	16 mil.
" December 31, 1882,	228.	66.8
" March 1, 1883,	8.9	3.
	<hr/> 388.2	<hr/> 85.8
Silver,	85.8	
Credits,	116.	
	<hr/> 600.	

Comparing the credit conditions § at the beginning and end of the operation, we find an appreciable variation in the price of *rente*, while exchange becomes somewhat easier.

	Feb. 8 to Apr. 7, 1881.			Feb. 15 to Mar. 3, 1883.			Mar. 31, 1883.		
	Average,			Average,					
Paris	London	Berlin		Paris	London	Berlin	Paris	London	Berlin
5 per cents.	89.75	88.37	90.	89.40	88.37	89.70	90.75	89.87	90.90
Exchange on									
Italy,	101.30	25.65	125.35	100.31	25.28	123.62			

Nothing, meanwhile, had happened to bring any new or unfavorable element into the situation. The budgets,|| notwithstanding,

\* *Prestita di 644 Milioni*, p. 22.

† *Ibid.* p. 12.

‡ *Ibid.*, pp. 25, 26.

§ *Ibid.*, pp. 31, 32.

|| *Annuario*, 1884, pp. 1054-1068.

standing the gradual cessation of the grist-tax, had annually presented a surplus.

	<i>Receipts.</i>	<i>Expenditures.</i>	<i>Surplus.</i>
1879	1228.1	1185.8	42.3
1880	1223.6	1196.7	26.9
1881	1220.9	1229.6	51.4
1882	1201.6	1227.6	4.0

The yield of the taxes \* showed a favorable increase also :—

	<i>Direct.</i>	<i>Consumption.</i>	<i>"Sugli affari."</i>
1879	361.80	469.90	153.61
1880	364.27	443.23	166.76
1881	373.46	484.17	169.04
1882	382.55	491.82	169.44

Finally, the special commerce † presented the following results :—

	<i>Imports.</i>	<i>Exports.</i>	<i>Difference.</i>
1879	1262	1161	161
1880	1226	1122	33
1881	1322	1192	140
1882	1345	1156	189

The general progress in every way had shown no signs of cessation. And Italy was now better situated for a transformation of the currency than when, two years before, the bill for resumption had been passed.

Everything, then, was in readiness. By a royal decree ‡ of the first of March, 1883, April 12, 1883, was fixed as the day for the cessation of the forced currency, and measures were taken for the formal execution of the provisions made for resumption by the law of April 7, 1881. On the date thus fixed for resumption, the condition of the treasury § was strong. It had in gold 515.3 mil.; in silver 5-franc pieces, 19. mil.; in small silver money, 136.7 mil.; and in non-decimal money, or in bullion, 6.7 mil.—making in all 677 mil. in specie. The amount of paper outstanding, which, as we have seen, was 940 mil. in 1881, had been somewhat reduced. On the first of December, 1881, the treasury had begun to redeem || in small silver the 50 centimes notes, and

\* *Annuario*, 1884, p. 1064.

† *Ibid.*, 1885, pp. 718, 719.

‡ *Bullettino Ufficiale*, 1883, pp. 141-145; also given in *Seconda Relazione della Commissione Permanente*, December 1, 1883, p. 179.

§ Sacha, *L'Italia*, p. 648.

|| *Bullettino Ufficiale*, 1883, p. 100 et seq.

at the time of resumption 6.8 mil. had been withdrawn. Further, in accordance with an agreement made in 1872, by which the banks of emission had facilitated certain operations of the Government, the treasury now redeemed in gold 50 mil. of the ex-*Consorzio* notes held by the banks. These two steps reduced the amount of State paper money to 883.2 mil. As it was intended to leave in circulation 340 mil. of this amount, the total sum to be withdrawn was 543.2 mil.

The operation began quietly. The time was a fortunate one, in that trade was commonly in April at a slack-water point. But, better than this, the foreign exchanges\* became strongly favorable to Italy, and brought an appreciable amount of specie into the country. From the 12th of April to the 30th of June, 1883, the importation of coin reached 10.5 mil., of which 6.2 mil. was in gold. No great pressure † for specie was shown. From the 12th of April to the 30th of June, 1883, only 1.5 mil. per day were exchanged against gold and silver. At no time did the operation stand in the slightest danger of panic.

The amount of ex-*Consorzio* notes remaining in circulation at several dates, and consequently the movement of withdrawal, is shown in the following table,‡ in millions of lire :—

	<i>Dec. 31, 1881.</i>	<i>April 12, 1883.</i>	<i>July 1, 1883.</i>	<i>July 1, 1884.</i>	<i>July 1, 1885.</i>	<i>July 1, 1886.</i>	<i>Amount with- drawn.</i>
50 c.	11.11	4.33	4.01	2.18	1.60	1.53	9.55
1 L.	39.86	40.10	36.28	12.68	5.55	4.05	35.81
2	65.53	66.12	60.50	19.96	7.89	4.81	60.72
5	201.47	201.28	183.14	82.96	42.43	25.57	175.90
10	342.36	341.96	341.78	194.51	65.53	35.94	306.41
20	50.20	48.38	43.87	30.27	18.27	10.93	39.33
100	60.00	58.07	53.22	38.89	25.40	17.89	42.11
200	87.83	74.91	67.23	44.03	23.72	18.57	60.46
1,000	181.58	148.06	129.16	81.67	44.64	39.64	141.94
	940.00	883.21	819.22	437.15	235.04	158.74	781.36

To replace 5 and 10 lire notes, as provided by the law of

\* Cucherel-Clarigny, *Les Finances de l'Italie*, p. 157.

† Sachs, *L'Italia*, p. 648.

‡ *Annuario, 1883, pp. 1128, 1139; 1885, pp. 890, 891. Relazione della Commissione Permanente, 1883, p. 111; 1884, pp. 19, 27; 1885, p. 22; 1886, p. 24.*

1881, State notes were issued, and were in circulation \* as follows:—

	<i>July 1, 1884.</i>	<i>July 1, 1885.</i>	<i>July 1, 1886.</i>
5 L.	84.14	99.00	100.00
10 L.	194.02	190.95	205.00
Totals,	288.16	289.95	305.00

The summary of operations down to July 1, 1886, stands, then, as follows:—

	<i>Redeemed in Cash.</i>	<i>Replaced by State notes.</i>	<i>Withdrawn.</i>
Before April 12, 1883,	56.79		56.79
April 12 to July 1, 1883,	63.99		63.99
Year ending July 1, 1884,	163.91	218.16	382.07
Year ending July 1, 1885,	120.32	71.79	202.11
Year ending July 1, 1886,	61.16	15.14	76.30
Totals,	476.17	305.00	781.36

The total paper circulation, both State and ex-*Consorzio*, remaining as a charge upon the treasury stood, at the several dates, as follows:—

December 31, 1881,	940.00	July 1, 1884,	655.31
April 12, 1883,	383.21	July 1, 1885,	534.99
July 1, 1883,	619.22	July 1, 1886,	463.83

At the date last named, the balance remaining from the loan of 600 mil. lire, after deducting 476.17 mil. for redemptions and 2.78 mil. for redemptions in progress,† was 121.10 + mil., which, with 170.02 mil. cash in the treasury, made the total stock of metal actually in hand after three years of specie redemption 291.18 mil. lire.

\* *Relazioni*, 1884, p. 25; 1885, p. 29; 1886, p. 25.

† *Relazioni*, iv. 31; v. 29-31.